UPDATE! MAGAZINE

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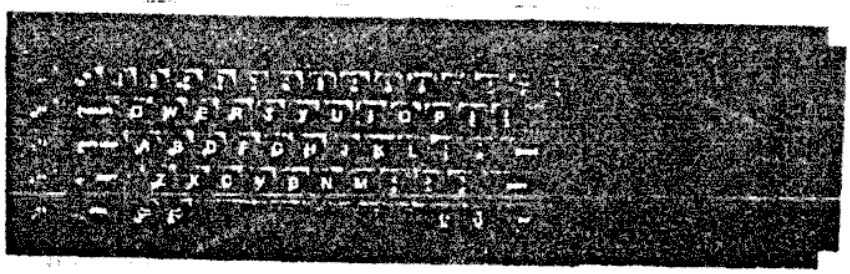
Take it to the Limit

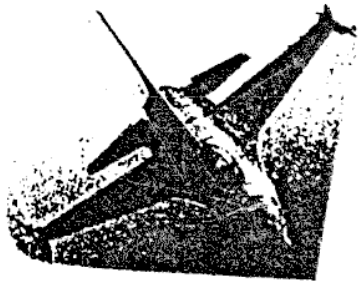
A Quarterly Magazine for the users

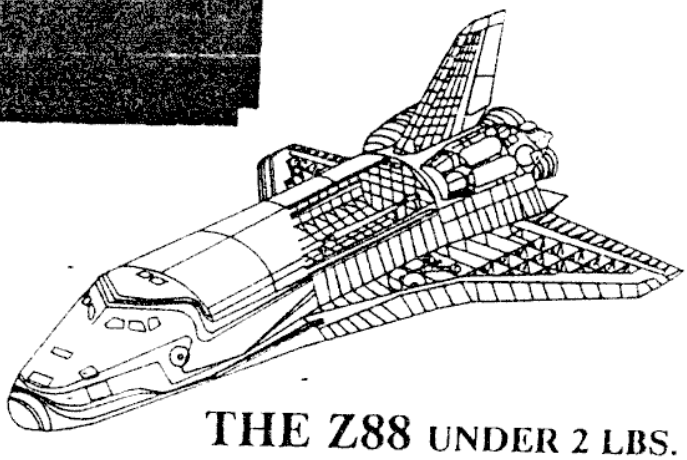
OF

SINCLAIR COMPUTERS

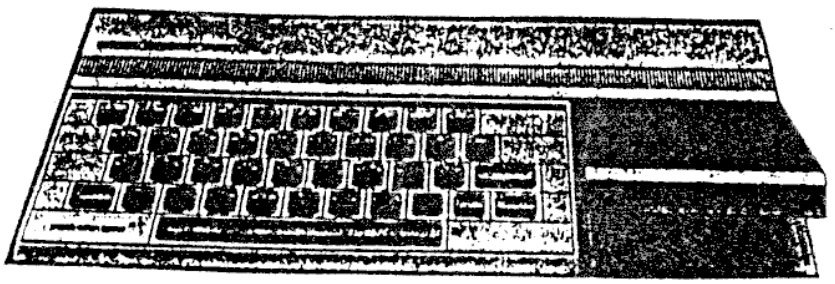
The Sinclair QL
-a 32 bit CPU Powerhouse!



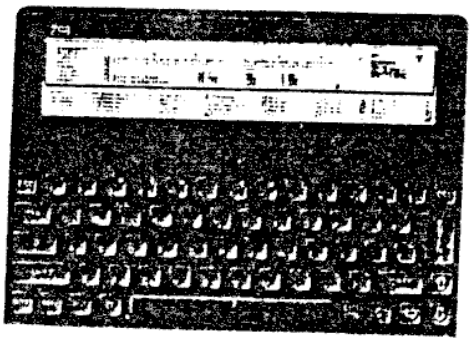




THE Z88 UNDER 2 LBS.
A Computer Without Compromise



The TS-2068 Workhorse



UPDATE COMPUTER SYSTEMS
P. O. Box 1095
Peru, Indiana 46970

NEWS AND NEW PRODUCTS

* UPDATE COMPUTER SYSTEMS *

UPDATE COMPUTER SYSTEMS is Edited and Published by Carol and Frank Davis of P.O. Box 1095, Peru, Indiana 46970. Phone number is 317-473-8031, with normal phone hours being between 5 P.M. and 9:30 P.M. Eastern Time during the week and Noon to 6 P.M. on weekends. When we are not there or unavailable, please leave a message with our answering machine. Unless urgent you will be answered by mail.

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Assistance in Publishing this magazine is provided by Eliad P. Wannum, poet, computer user and all round good guy. The magazine is made possible by the regular contributors such as Peter Hale, Bill Cable, Al Feng, Bob Hartung to name a few, and by the many contributions of other writers and programmers. Your contributions to this magazine are welcome. This is truly a magazine BY THE USER AND FOR THE USER OF SINCLAIR, TIMEX AND CAMBRIDGE COMPUTERS. When we cover other operating systems such as CPM or MSDOS it will be in relationship to our computers or emulators for our systems to run their software. We primarily cover disk based systems and software for the TS2068, Spectrum, QL, Z88...and will cover items on the TS1000 if disk drive based or in relationship to using it with the above mentioned computers. We do accept reviews of peripherals that are useable by our systems, such as scanners, printers, modems, etc. Submissions should be on disk or hard copy (two copies and at least NLQ, no draft mode). If there is artwork, please let us know in what order it should be used, and provide it as a saved screen or hard copy screen dump. The format is very relaxed. Just pay attention to the width of the pages and allow 3/4 inch top and bottom, and make the left and right margins wide enough to accomodate a 3 hole punch that does not cut out some of the text. We have enlarge and reduction capacity to adjust a page, but may lose some print legibility in the process. Most important is legibility. Draft quality dot matrix does not reproduce well. Print size preference is ELITE 12 characters per inch. PICA 10 characters per inch is okay also, but please no condensed print. Please do not make programs submitted on cassette tape under any circumstance, disk or hardcopy only. Exceptions to this would be the wafers used on the Rotronics Wafadrive for the Spectrum or TS2068 with emulator. Z88 programs on disk may be in either IBM or QL format or hardcopy. TS2068 programs may be LLISTED in 32 chr. lines, but that is not solely necessary, just do not send a copy protected disk that needs to be LLISTED.

The computer that an article concerns is marked by using the following mark at the start of the page number-TS2068 = *,QL = # ,Z88 = % . There will be no mark if the article or ad applies to all or several different computer systems.

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Back Covers ---Issue Disks for TS2068 and QL

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EDITORIAL by F.W. Davis

Welcome to the first issue; the second year of Carol and I publishing UPDATE Magazine. The first year was fun, educational, and at times frustrating. We lived through it and were glad for the experience. Now we are solidly decided to give it a go for the second year. Our subscribers have at least another three issues, besides this one , to look forward to. If you have not yet renewed, or have mysteriously received this copy in your mailbox, then please take the time to send in your check or money order at this time. This is not a high profit enterprise and is solely supported by your subscriptions. This goes for dealers also and for those who advertise in UPDATE. The ads may be for free or on an exchange basis, but the magazine is not. Whew!! now that I have all that nasty reminder stuff out of the way, let us get down to the fun part of articles, programs and ads. The best part of all of this is that with what I have waiting in the wings, the next issue looks to be even better.

At this time I am going to take a look at some of the items that our readers have said they would like to appear in the pages of UPDATE Magazine. I hope this will inspire many of you to write in with articles, hints, tips and programs to answer these requests. All of these answers are out there amongst you, the readers. So far, to the best of my knowledge all such requests have been answered prior to this.

Jean-Claude Touzin writes saying that he was buying a Hewlett Packard Laser Jet III and would like to see information concerning the use of Laser Printers with the Sinclair QL. I know that Bill Cable has a laser printer, and that Text 87 has been run with a laser printer driver (Peter Hale of EMSoft is a great source for this). Perhaps one of you, or someone unknown to me can answer this one.

This is one we really need to improve on...Alvin E. Bicht asks for more printed programs for the QL. He also asks for us to discuss the exact meaning of the terms "track" and "sector" relative to disk drives. A very thorough explanation of these terms is found in the Digital Precision manual for Solution and for their program, Super Media Manager. Perhaps someone could do a synopsis of this subject for us. It would also be a good place to discuss why there are so many different disk formats and in what way some of them differ. Any takers on this one?

Here is one I would like to see an answer on myself. Anthony Trice asks that we get a section put in the magazine for the readers to ask TECHNICAL QUESTIONS. The request he had was to hear from someone who was using a colour printer with the QL. Since I have two printers capable of colour myself, I have to agree that an article on this would be most welcome. Also this would be good for the Z88 and the TS2068.

I ran across a note that was sent to me by one of our departed subscribers, Marinus W. Heuseveldt. He had said to tell Larken Ramdisk users that Chips # LH52256L-12 by Sharp of Japan also work well in the Larken Ramdisk board. He also sent a long list of items he wanted to see in print, and I wish that he had lived long enough to see this happen. He wanted to see: (1) Transferring Text and Data programs from TS2068 to the QL. (2) Transferring from TS2068 to MSDOS. (3) Networking two TS2068s, without the use of a twister board and Interface Ones. (4) Using the TS2068 as a slave computer (co-processor) to the QL. He also wanted to see a method of linking a TS1000 to a QL. Here are several challenges for our readers to come up with the answers

on.

Lawrence P. Sauter asks "does anybody have a disk header reader for the Oliger Disk Drive System?" I bet this is one that Bill Pedersen will be able to answer. Bill has recently acquired an Oliger Disk Interface to accompany his Larken.

Jim Bretz wrote to say that he wanted to see more TS2068 projects. He also said he would have a payroll program coming. He also said for us not to forget the ZX81/TS1000. They make great controllers. Controller projects anyone? You send it, and if it works, we will publish it. We could put some of these hundreds of thousands of TS1000s back to work and lessen the computer unemployment line. He also says that he has a modem, but no one to call and says that we should start a BBS. I have to confess that I have thought of doing this, but wondered about the time to maintain the SYSOP side of this. I am open to suggestions.

Bob Mitchell of Ontario Canada had written saying he wanted us to provide TS2068 listings with 32 column layout and with short lines that were preferably not more than 100 characters or so, as otherwise cursor movement is slow and that pesky delete key becomes a headache. These are both points well taken and I hope our writers take heed.

Tom E. Bair wrote saying that he has Wordliner and Typeliner and was having a problem with it. He has auto linefeed on his printer OFF, loads !custom and reset the linefeed from 10 to 0 and still gets double line spacing. He is using an Aerco interface and has verified with the correct PEEK that it is in use. HELP! Someone send both Tom and us the answer. I wonder what printer he is using? He can be reached at 2277 Grand Ave., Shelby, Michigan 49455-9790.

John Shepard III wants to see a tutorial series on getting graphics programs such as DTP, Tech Draw Jr. etc. to run on all printers. This would allow those who have a printer that does not have much support to be able to make use of all of our intensive graphics programs. This is a tall order, but John is correct in the need for such a series.

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TS-2068 Super Calc

The two Menus kinda tells the story for this new software. It is a long Key in project (about 27K), so you might want to order the disk from Update Magazine and save time. But if you want to key it in you will learn more about the program as you are dunning it.

Most of us have used the classic View Calc by PSION. View Calc is a nice program but everytime I operate it I think about the things that I would like for it to do that it cannot. So, this program is designed to do those jobs for me. Actually what prompted me to get started was two recent occasions when family members were contemplating borrowing money. My Son was buying a car and my Daughter was about to buy some real estate. Both really needed some guidance as they were about to hitch themselves to a heavy load for a very long time.

So, for discussion we will go down the electives of the two menus, item by item.

1. Calculator Mode: This provides most of the functions of hand held calculators, but with more versatility of input. The Computer allows input of math calculations, like Sqr Root, Exponent formula, + and - numbers, multiplication, numbers minus or plus other numbers, etc. These inputs exceed the versatility of most calculators. Another plus for calculating with the computer is its ability to display more information. One mode of calc is to use Constants to add, multiply, divide, or subtract. The screen displays two windows showing the math "with constant" and "without constant"

2. Loan Cost Spreadsheet: When this function is elected the printer prints out a spreadsheet of "Cost Per Thousand" of a loan. The table has a range of from 5% through 20%, and from 2 years through 35 years. The table can be used (away from the computer) for estimating the parameters of almost any loan that one is contemplating.

3. Amortization Spread Sheet: Enter the total price, Down Payment, Interest Rate, and Time. If the Loan has "Points" then the effect of Points is computed. The print out of the spreadsheet is "by payment number" through to the end, giving Interest by month and the reduced principal. An Ending Summary includes Total Interest, Total Cost, Cost per $1000, and an analysis of the effect of Points if any.

4. Loan Payment Inquiry: A quick Screen displays the status of any Loan at any Payment number. The display gives: Balance at that payment number, Total paid to Interest, and Total paid to principal.

5. Commercial Loan Analysis: This feature analyzes a proposed buy of property or a business and provides profit or loss projections. It also provides a comparison between the proposed purchase and the savings of the debt service at 6% interest. The net profit-loss is compared to savings over the time of the proposed loan term and by year. The summary also provides Capitol Gains by year and by loan duration. It is a complete guide for analyzing commercial investments.

6. Systematic Savings Spreadsheet: Prints out sinking fund accumulation (something thay Yuppies need to think about).

7. Quick Saving Calc: Same as <6> but gives screen info for input time.

8. Fixed Investment Speadsheet: This is for money mart and other fixed investment when guaranteed interest is known.

9. Calc with Interest: See Secondary Menu, which is self explaining.

Notes for Key In Guidance

The Listing is prepared for DUAL use of Oliger and LKDOS, or for individual use of either DOS.

The first group of program lines "builds the main menu". After the menu is built, it is SAVED as a screen to disk. After keying in lines 8000 through 8024 you should RUN the program and check out the appearance of the Menu. If O.K. then remove the REM of either line #8022 or 8024 (for LKDOS or Oliger DOS). Then RUN the program again, and this time type CONTINUE ENTER to SAVE the Menu Screen. Once that is done the lines 8000 through 8026 should be DELETED.

Once the Menu is SAVED, the program actually begins at line #9038. The earlier DEF FN () lines are ignored except when FN() is used in a program line.

PRINTER / INTERFACE INITIALIZATION

When the program first runs, line #9038 operates to exercise the SET PRINTER routine. This routine is Lines 9342 through 9356 and bears some explaining.

First, lets look at line #9350. This is a "Check Printer Status" routine. You may need to change the figure "237" for your TS-2068. Try this: With the Printer ON, But OFF LINE, and the Computer initialized for your DOS, type: PRINT IN 127 ENTER. If you get anything BUT 237, then EDIT line #9350 and insert that number instead of 237. You can do this even before you key in the listing and make a pen and ink change in the listing.

Next, CHECKING your PRINTER COMMANDS: Line #9348 has a "Style Selection" menu to set a print style. The variable "ps=" is set to three possible styles of print: ps=1=pica, ps=2=elite, ps=3=micron. It is likely that you will need to change the <3> selection from micron to CONDENSED in line 9348.

Then in line #9348, the first groups of commands are to "SET LETTER QUALITY", which for my printer is <OUT 127,27: OUT 127,120: OUT 127,1>. Check your own printer manual and substitute the proper command codes to SET LETTER QUALITY.

Then in Line #9349, the maximum line length variable "lx" is set "for the print style elected". If you have changed from micron to CONDENSED for the small print style, erase "120" and substitute "136".

Then in line #9338 we Command the printer to SET THE STYLE of Print as elected: ps=1=PICA, ps=2=ELITE, ps=3=micron or Condensed. We begin the SET COMMANDS with <OUT 127 Commands>. You should compare your Printer Manual Commands (for each of the 3 styles) to those used in the program line. Substitute the correct commands: I use for Pica: <OUT 127,27: OUT 127,80>. For ELITE: <OUT 127,27: OUT 127,77>. For Micron: <OUT 127,27: OUT 127,103>. Edit and Substitute your own correct command numbers for setting these styles of print.

Then the last three commands of Line #9349 are <OUT 127,27:OUT 127,120: OUT 127,1>, to set LETTER QUALITY. Check your own printer's commands to SET LETTER Quality and substitute.

The Printer and Interface section, line numbers #9342-9356, can be extracted and used for your other programs to "Initialize the Interface and Provide a Menu for changing Print Styles". It works for either Oliger Dos and LKDOS, or both.

OLIGER DOS commands, using the slash bar "/" after load or save commands will not ENTER if the Oliger DOS is not active. To solve this, key in the program line and then back up to the line number and insert REM. Then the line will ENTER.

Other than explained above, the program has no tricks and is easy to key in and operate.

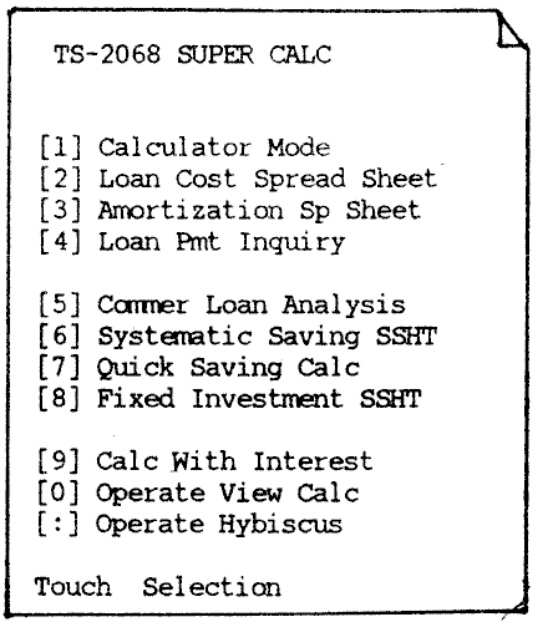
The Amortization Spreadsheet takes about one minute for the program to build the SS. The calculation of Amortization is a "calculus of variations of curves" math problem having insufficient finite information to compute the values. The calculation begins with a "Guess at the mortgage payment" and proceeds to run a "trial spreadsheet". The first spreadsheet is always WRONG, and the "Guess" is up-dated until the actual payment is as correct as is possible. At that time the program jumps to the Print Out routine. It should be interesting for you math connoisseurs to check out my (amateur) method of solving this problem. Kids today think that Mathematics is where General Lee Surrendered, and calculus is what makes them have to go to the dentist. It would behoove us all to stock up on Math Programs, as the Mathematician is now an endangered specie. Enjoy! -BJ_

TS-2068 Super Calc

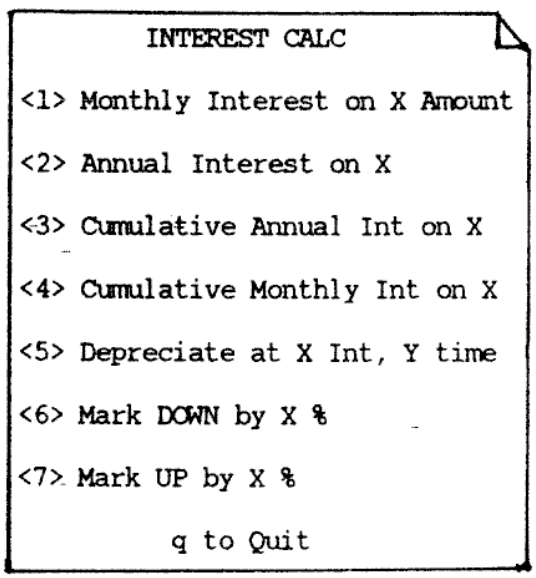
For Oliger and LKDOS

Donated to Public Domain By:
Bill Jones

The Main Menu



The Secondary Menu


INTEREST CALC
<1> Monthly Interest on X Amount
<2> Annual Interest on X
<3> Cumulative Annual Int on X
<4> Cumulative Monthly Int on X
<5> Depreciate at X Int, Y time
<6> Mark DOWN by X %
<7> Mark UP by X %
q to Quit

The LLISTING

```
8000 BORDER VAL "1": PAPER VAL "1": INK
 VAL "7": CLS
8002 PRINT INK VAL "2";"
                "'AT VAL "21",VAL "0";
"                                    ": INK
 VAL "5": FOR n=VAL "1" TO VAL "20": PR
INT AT n,VAL "0";" ";AT n,VAL "31";" ":
 NEXT n
8004 INK VAL "5": PRINT AT VAL "1",VAL
"1";"                                  ";AT
 VAL "20",VAL "1";"
                "
8006 INK VAL "2": FOR n=VAL "2" TO VAL
"19": PRINT AT n,VAL "1";" ";AT n,VAL "
30";" ": NEXT n
8008 INK VAL "2": PRINT AT VAL "0",VAL
"0";" ";AT VAL "0",VAL "31";" ";AT VAL
"21",VAL "0";" ";AT VAL "21",VAL "31";"
 "
8010 INK VAL "5": PRINT AT VAL "1",VAL
"1";" ";AT VAL "1",VAL "30";" ";AT VAL
"20",VAL "1";" ";AT VAL "20",VAL "30";"
 ": INK VAL "7"
8012 PRINT AT VAL "2",VAL "3"; INVERSE
VAL "1"; INK VAL "2";"
          ";AT VAL "3",VAL "3"; INK VAL
"5";" "; INK VAL "7";AT VAL "3",VAL "4"
;"   TS-2068 SUPER CALC  "; INVERSE VAL
 "0";" "; INK VAL "5";" ";AT VAL "3",VA
L "2"; INK VAL "2";" ";AT VAL "3",VAL "
29";" ";AT VAL "2",VAL "2";" ";AT VAL "
2",VAL "29";" ";AT VAL "4",VAL "2"; INK
 VAL "5";"                             "
8014 PRINT AT VAL "6",VAL "3"; INVERSE
VAL "1";"[1] Calculator Mode        "; I
NVERSE VAL "0"
8016 PRINT AT VAL "7",VAL "3";"[2] Loan
 Cost Spread Sheet"; INVERSE VAL "1";AT
 VAL "8",VAL "3";"[3] Amortization Sp S
heet "; INVERSE VAL "0";AT VAL "9",VAL
"3";"[4] Loan Pmt Inquiry"; INVERSE VAL
 "1";AT VAL "11",VAL "3";"[5] Commer Lo
an Analysis  ";AT VAL "12",VAL "3"; INV
ERSE VAL "0";"[6] Systematic Saving SSH
T"; INVERSE VAL "0";AT VAL "13",VAL "3"
; INVERSE VAL "1";"[7] Quick Saving Cal
c      "
8018 PRINT AT VAL "14",VAL "3"; INVERSE
 VAL "0";"[8] Fixed Investment SSHT ";
INVERSE VAL "1";AT VAL "16",VAL "3";"[9
] Calc With Interest     "; INVERSE VAL
"0";AT VAL "17",VAL "3";"[0] Operate Vi
ew Calc      "; INVERSE VAL "1";AT VAL "
18",VAL "3";"[:] Operate Hybiscus
"; INVERSE VAL "0";AT VAL "20",VAL "6";
 PAPER VAL "5"; INK VAL "2";" "; INK VA
L "0";" Touch  Selection "; INK VAL "2"
; INVERSE VAL "1";" "; INVERSE VAL "0";
 PAPER VAL "1": INK VAL "7  "
8020 INK VAL "7": STOP
8022 REM (LKDOS) RANDOMIZE USR VAL "100
": SAVE "cal.C2"SCREEN$ : STOP
8024 SAVE /"cal.C2"SCREEN$ : STOP
8026 REM ** After constructing the Menu
```

```
, remove REM for DOS you    have and SA
VE.  ** DELETE lines thru Line 9026.  *
* Program begins  with Line # 9038
9016 DEF FN h()=c*i
9018 DEF FN l()=b5+b5*xb/100
9020 DEF FN m()=b5-b5*xb/100
9022 DEF FN n()=b5+xa
9024 DEF FN o()=b5-xa
9026 DEF FN v()=((xpmt-p2)/t2/-a2 AND x
pmt<p2 AND int>.149)+((p2-xpmt)/t2/10 A
ND xpmt>p2 AND int>.149)+((xpmt-p2)/t2/
a1 AND xpmt<p2 AND int<.15)+((p2-xpmt)/
t2/4 AND xpmt>p2 AND int<.15)
9028 DEF FN a()=tad-LEN STR$ INT x
9030 DEF FN i()=INT (100*(p*i/12+.005))
/100
9032 DEF FN p()=pmt-FN i()
9034 DEF FN r()=p-(pmt-i2)
9036 DEF FN x()=prin-(prin-p)
9038 GO SUB VAL "9342"
9040 REM LKDOS BORDER VAL "1": PAPER VA
L "1": INK VAL "7": CLS : RANDOMIZE USR
 VAL "100": LOAD "cal.C2"SCREEN$
9041 BORDER VAL "1": PAPER VAL "1": INK
 VAL "7": CLS : LET tad=24: LOAD /"cal.
C2"SCREEN$
9042 PAUSE VAL "0": LET z=CODE INKEY$-V
AL "48": GO TO (z<VAL "0" OR z>VAL "10"
)*VAL "9042"+(z=VAL "1")*VAL "9360"+(z=
VAL "2")*VAL "9254"+(z=VAL "3")*VAL "90
48"+(z=VAL "4")*VAL "9192"+(z=VAL "5")*
VAL "9130"+(z=VAL "6")*VAL "9108"+(z=VA
L "7")*VAL "9172"+(z=VAL "8")*VAL "9142
"+(z=VAL "9")*VAL "9540"+(z=VAL "0")*VA
L "9238"+(z=VAL "10")*VAL "9240"
9044 REM Estimated Amortization
9048 CLS : GO SUB VAL "9348": CLS : PRI
NT AT VAL "6",VAL "1";"Loan Amortizatio
n Spreadsheet": INPUT "Enter Total Purc
hase Price $";tpp: INPUT "Enter Down Pa
yment $";dp: LET prinx=tpp-dp: INPUT "E
nter Points, 0 if none";pts: LET point=
(pts/VAL "100")*prinx: LET prin=prinx+p
oint: LET p2=prin
9050 INPUT "Input Interest rate % ";i:
LET int=i/VAL "100": LET di=int*prin/VA
L "12": INPUT "Time in years?";time: LE
T t2=time*VAL "12": IF pts>VAL "0" THEN
 GO SUB VAL "9236"
9052 CLS : PRINT #VAL "0"; INVERSE VAL
"1";"Calculating Spreadsheet . . ."
9054 LET a1=-VAL "4.5": LET a1=a1+(i-VA
L "5")*VAL ".12": IF time>VAL "30" THEN
 LET a1=-VAL "9": IF time>VAL "30" THEN
 LET a1=-VAL "11"
9056 LET a2=(-VAL "20" AND time<VAL "20
.1")+(-VAL "25" AND time>VAL "20" AND t
ime<VAL "30.1")+(-VAL "35" AND time>VAL
 "30" AND time<VAL "35.1")+(-VAL "70" A
ND time>VAL "35" AND time<VAL "40.1"):
IF i>VAL ".15" AND time>VAL ".15" THEN
LET a2=a2*-VAL "1"+time-VAL "15": IF ti
me>VAL "28" AND int>VAL ".15" THEN LET
a2=a2*VAL "2": IF time>VAL "33" AND int
>VAL ".17" THEN LET a2=a2*VAL "2"
9058 LET p2=prin: LET di=int/VAL "12":
LET xpmt=INT (VAL "1000"*(prin*int/VAL
"12"+VAL "1"/time))/VAL "1000"
9060 PRINT AT VAL "10",VAL "0";"Calcula
ting Amortization for:"'"$";prin;" at
";i;"% for ";time;" Years."'"Loan Poin
ts are ";pts''"Wait for calculations.
."
9062 LET a=VAL "0": LET b=VAL "0": LET
c=VAL "0"
9064 FOR y=1 TO t2-1: GO SUB 9088
9066 GO SUB 9086
9068 NEXT y
9070 LET x5=xpmt: LET p2=INT (100*p2+.5
)/100: LET x6=ABS (p2-xpmt): IF x6<.01*
(t2+t2/1.6) THEN GO TO 9082
9072 LET x7=ABS (p2-xpmt): IF time>24 A
ND time<30 AND x7<t2/18 OR time>29.9 AN
D time<35 AND x7<t2/4 OR time>34.9 AND
x7<t2/3 THEN GO TO 9082
9074 LET x8=ABS (p2-xpmt): IF time>30 A
ND x8<t2/10 OR time>34 AND x8<t2/1.5 OR
 time>37 AND x8<t2 THEN GO TO 9082
9076 LET xpmt=INT (100*(xpmt+FN v())+.5
)/100: IF xpmt=x5 AND ABS (p2-xpmt)<t2/
20 THEN GO TO 9082
9078 LET a=0: LET b=0: LET c=0: LET p2=
prin: IF x5=xpmt THEN LET xpmt=(xpmt+.0
1 AND xpmt<p2)+(xpmt-.01 AND xpmt>p2)
9080 GO TO 9062
9082 LET p2=prin: LET a=0: LET b=0: LET
 c=0: LPRINT TAB 8;"Amortization Schedu
le for $";prinx;" at ";i;"% Interest fo
r ";time;" Years"''TAB VAL "27";"Mortga
ge Points= ";pts''TAB VAL "20";"Regular
 Monthly Payment= $";xpmt'': IF pts>VAL
 "0" THEN PRINT TAB VAL "8";"Note: ";pt
s;" Mortgage Points makes the Beginning
 Mortgage Princpal=$";prin''
9084 LPRINT TAB VAL "8";"Pmt #";TAB VAL
 "20";"Details"'': FOR y=VAL "1" TO t2-
VAL "1": GO SUB VAL "9088": LET b=b+a:
GO SUB VAL "9094": NEXT y: GO TO VAL "9
100"
9086 LET b=b+a: LET pmt=xpmt-a: LET p2=
p2-pmt: LET a=0: LET c=c+pmt: RETURN
9088 LET a=0: LET a=a+int*p2/12: GO SUB
 9090: RETURN
9090 IF xpmt<a THEN LET xpmt=a*1.008: L
ET p2=prin: LET a=0: LET b=0: LET c=0:
GO TO 9062
9092 RETURN
9094 LET p2=p2+a: LET pmt=xpmt-a: LET p
```

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2=p2-xpmt: LPRINT TAB VAL "8";"#";y;TAB
 VAL "13";"Int=";TAB VAL "28";"$";INT (
VAL "100"*a+VAL ".5")/VAL "100";TAB VAL
 "40";"Tot Int=";TAB VAL "52";"$";INT (
VAL "100"*b+VAL ".5")/VAL "100"': LET a
=VAL "0"
9096 LET c=c+pmt: LPRINT TAB VAL "13";"
Pmt to Prin=";TAB VAL "28";"$";INT (VAL
 "100"*pmt+VAL ".5")/VAL "100";TAB VAL
"40";"Prin Bal=";TAB VAL "52";"$";INT (
VAL "100"*p2+VAL ".5")/VAL "100"''
9098 RETURN
9100 GO SUB VAL "9088": LET pmt=p2: LET
 p2=p2+a: LET b=b+a: LET c=c+pmt: LPRIN
T TAB VAL "8";"Final Payment=";TAB VAL
"28";"$";INT (VAL "100"*p2+VAL ".5")/VA
L "100"''TAB VAL "8";"#";y;TAB VAL "13"
;"Int=";TAB VAL "28";"$";INT (VAL "100"
*a+VAL ".5")/VAL "100";TAB VAL "40";"To
t Int=";TAB VAL "52";"$";INT (VAL "100"
*b+VAL ".5")/VAL "100"'TAB VAL "13";"Pm
t to Prin=";INT (VAL "100"*pmt+VAL ".5"
)/VAL "100";TAB VAL "40";"Prin Bal=";TA
B VAL "54";"0"''
9101 LPRINT TAB VAL "30";"Summary"''TAB
 VAL "5";"Principle= $";prin;" // Time=
";time;" Yrs // Interest=";i;"% // Regu
lar Pmt=$";INT (xpmt*VAL "100"+VAL ".5"
)/VAL "100"'TAB VAL "6";"Final Pmt= $";
INT (VAL "100"*p2+VAL ".5")/VAL "100";"
 // Tot Int= $";INT (VAL "100"*b)/VAL "
100";"  // Tot Loan Cost= $";INT (VAL "
100"*(b+c))/VAL "100"'TAB VAL "6";"Tota
l Contract Cost (Pmts + Down Pmt= $";IN
T (VAL "100"*(b+c+dp))/VAL "100"''
9102 LPRINT TAB VAL "6";"The Loan Cost
Per $1000 is $";INT (VAL "100"*INT (VAL
 "100"*(b+c))/VAL "100"/(prinx/VAL "100
0")/t2)/VAL "100"': IF pts>VAL "0" THE
N LPRINT TAB VAL "6";"NOTE: The ";pts;"
 Mortgage Points makes the actual APR I
nterest approx: ";pts/VAL "5"+i;"%"'TAB
 VAL "6";"and increases the Total Cost
of the Mortgage by approx $";pts*VAL ".
1"*(prinx/VAL "1000")*t2''TAB VAL "6";"
The effect of Points increases as Mortg
age Time Increases."
9104 OUT VAL "127",VAL "12": GO TO VAL
"9040"
9106 REM ** Savings
9108 CLS : LET gg=VAL "0": PRINT AT VAL
 "10",VAL "0";"Computing SAVINGS at var
ious    Rates and TIME": INPUT "Enter B
eginning Savings to be   added to (0 if
 none) $";beg: INPUT "Enter Amount to S
ave Monthly    $";c: INPUT "Enter Inter
est Rate ";i: INPUT "Enter time in Yrs
or .5 fraction";time: LET int=i/VAL "12
00": LET v=beg
9110 LET y=VAL "1": LET b=VAL "0": LET
a=VAL "0": GO SUB VAL "9348"
9112 PRINT "Calculating Savings of $";c
'"Per Month / At ";i;"% Int For ";time;
" Yrs": LPRINT TAB VAL "6";"Monthly Sum
mary for Saving $";c;" Per Month At ";i
;"% For ";time;" Years"''
9114 FOR n=VAL "1" TO time
9116 LPRINT TAB VAL "6";"Year #";n''
9118 FOR y=y TO y+VAL "11"
9120 LET a=v*int: LET b=b+a: LET v=v+c+
a: LET v=INT (v*VAL "100"+VAL ".5")/VAL
 "100": LPRINT TAB VAL "6";"Month #";y;
TAB VAL "16";"Cur Int=$";INT (VAL "100"
*a+VAL ".4")/VAL "100";TAB VAL "34";"To
t Int=$";INT (b*VAL "100"+VAL ".5")/VAL
 "100";":";TAB VAL "53";" Tot Save= $";
v''
9122 NEXT y: NEXT n
9124 IF gg=VAL "1" THEN LET gg=VAL "0":
 RETURN
9126 OUT VAL "127",VAL "12": GO TO VAL
"9040"
9128 REM  Investments
9130 CLS : PRINT INVERSE VAL "1";"RULES
 FOR COMMERCIAL PROPERTY"; INVERSE VAL
"0";'""1. Be aware that the PRICE AND
   TERMS ARE NEGOTIABLE."'""2. The Appr
aised value should      provide the sec
urity needed      for a 15 Year Loan of
95% of     the TOTAL Selling Price.  IF
   NOT, BEWARE!"''
9132 PRINT "3. LOAN INTEREST should be
not     over 2% ""Above PRIME RATE""
   ""WITHOUT POINTS."" ELSE, LOOK   FO
R ANOTHER DEAL."
9134 PRINT '"4. Most confuse the purpos
e of     a Commercial Property, which
  is "; INVERSE VAL "1";"TO PRODUCE PRO
FITS"; INVERSE VAL "0";" - AND"'TAB VAL
 "3";"NOT TO SPECULATE FOR RESALE."
9136 PRINT '"5. THE PRIME RULE is that
the      INCOME must PAY the DEBT
  SERVICE, -PLUS- COSTS -PLUS-    A MON
THLY PROFIT - "; INVERSE VAL "1";"OVER
A   "; INVERSE VAL "0"'TAB VAL "3"; INV
ERSE VAL "1";"10 to 15 Year Mortgage Te
rm."; INVERSE VAL "0"''TAB VAL "3";"IF
NOT THEN NO DEAL!"
9138 PRINT '"Otherwise, you'll be bette
r off with PURE SAVINGS, and you wont h
ave to work at all!": PRINT #VAL "0";"E
nter": PAUSE VAL "0": CLS : PRINT AT VA
L "10",VAL "0";"Do you Know the LOAN MO
NTHLY PAYMENT and Interest factors?"''"
If NOT, Lets Start by Using the Main Me
nu to get an AmortizationSpreadsheet."'
'"Then Return to this Section via Menu.
": INPUT "<1> Get S-SHT <2> Continue";x
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: IF x=VAL "1" THEN GO TO VAL "9040"
9140 CLS : PRINT AT VAL "8",VAL "0";"Co
mparative Savings of Monthly  Payment A
mounts."
9142 INPUT "Enter the MONTHLY PAYMENT o
f theProposed Contract $";m: INPUT "Ent
er Down Payment $";dp: INPUT "Enter Yea
rs or .5 Year FractionsYrs: ";time: LET
 i=VAL "6": LET int=i/VAL "1200": LET a
=VAL "0": LET b=VAL "0": LET v=VAL "0":
 LET y=VAL "1": LET gg=VAL "1": PRINT #
VAL "0";"Computing Comparative Savings
6%": GO SUB VAL "9176"
9144 CLS : PRINT AT VAL "2",VAL "0";"Th
e Monthly Debt service, if it were SAVE
D at 6% interest would be worth "; INVE
RSE VAL "1";"$";v; INVERSE VAL "0";" in
 ";time;" Yrs."'': BEEP VAL ".2",VAL "1
8": INPUT "Enter the TIME that you beli
eve that you will spend Daily on  thi
s project.";td: BEEP VAL ".2",VAL "20":
 INPUT "Enter an Hour Value of your tim
e";th
9145 LET plc=VAL "52"*VAL "5"*th*td: LE
T plct=INT (plc*time): LET vt=INT VAL "
100"*(v+plct+VAL ".5")/VAL "100": PRINT
 "If you spend ";td;" hours per day"''"w
orking on this project, and  your tim
e is worth $";th;" per hr,"''"then your
labor cost, added to  the potential sav
ings is: "' FLASH VAL "1";"$";vt; FLASH
 VAL "0"
9146 PRINT '''"Please make a note this F
igure."''"It can be used by you to decid
e if your time and risk is worth  more
or less than the possible  gain from th
e purchase of incomeproducing property.
"
9148 PRINT #VAL "0";"ENTER": PAUSE VAL
"0": CLS : PRINT AT VAL "8",VAL "0";"CO
ST V/S INCOME ANALYSIS": BEEP VAL ".2",
VAL "20": INPUT "Enter Your Estimated H
IRED LABORCOST PER WEEK (Include SSI an
d  Workman Comp)";lcw: LET lcx=VAL "52"
*lcw:
9150 INPUT "Enter Annual  Insurance Cost
     ";inx: INPUT "Enter Annual Propert
y Tax ";tax: INPUT "Enter Local Busines
s tax";btx
9152 INPUT "Enter Estimated Weekly Cost
 of  consumables";conw: LET conx=conw*V
AL "52": INPUT "Enter Estimated Monthly
 Cost of Replacements (Furnature, etc)
  ";furm: LET furx=furm*VAL "12": INPUT
 "Input est MONTHLY cost of Cont- ract
Service (cleaning, laundry,yard work, e
tc)";outm: LET outx=outm*VAL "12": INPU
T "Input Monthly Utilities total  (Pho
ne, gas, elect, garbage, etc)";utlm: LE
T utlx=utlm*VAL "12"
9154 INPUT "Enter Monthly Debt Service
     $";xpmt: LET pmtx=xpmt*VAL "12": I
NPUT "Input Estimated Monthly Gross  i
ncome from all Sources (Rents, leases,
etc) (deduct expected  vacancies or lo
sses)";incm: LET incx=incm*VAL "12": IN
PUT "Enter a year total of ALL other pr
ojected  expenses not covered ";otx
9156 LET expx=plc+lcx+inx+tax+btx+conx+
furx+outx+utlx+pmtx+otx: LET expt=expx*
time: LET incxt=incx*time: LET nincx=IN
T VAL "100"*(incx*VAL ".61"+VAL ".5")/V
AL "100": LET nincxt=time*nincx
9158 PRINT "Your Annual Cost is ";expx'
'"Your Annual Gross income is  ";inc
x'''Projected Net income is ";("POSITIV
E" AND incx>expx)+("Negative" AND  incx
<expx);" ";"$";ABS (incx-expx);" Per Ye
ar"
9160 LET diff=ABS (expx-incx)/VAL "12":
 IF expx>incx THEN PRINT '''You will ne
ed to spend "; INVERSE VAL "1";"$";INT
(VAL "100"*diff+VAL ".5")/VAL "100"; IN
VERSE VAL "0"''"EACH MONTH to make up th
e diff- erence."
9162 IF expx>incx THEN PRINT '"The only
 justifiable purpose forcontinuing this
 plan would be a need for TAX LOSS of $
"; INT (VAL "100"*(expx-incx)+VAL ".5")
/VAL "100"''"per Year for ";time;" Years
."''#VAL "0";"Enter": PAUSE VAL "0": GO
 TO VAL "9040"
9164 CLS : LET prin=prin+dp: LET eqd=IN
T (prin-VAL ".0267"*prin): PRINT '' INV
ERSE VAL "1";time;" Yr SUMMARY"; INVERS
E VAL "0"''"Depreciated Equity= $";eqd;
'
9166 LET earnx=INT (incx-expx)*VAL ".71
": LET earnt=earnx*VAL "15": PRINT '"Ne
t ";time;" Yr Earnings= $";earnt''"Equi
ty + Earning=  $";INT (eqd+earnt)'''Dis
posable Earnings Per Year="'"$";earnx''
time;" Yr Capitol Gain= $";INT eqd-dp''
9168 LET tott=earnt+eqd-dp: LET comp=AB
S INT (vt-tott): PRINT INVERSE VAL "1";
"Comparison Saving V/S Investing"; INVE
RSE VAL "0"''"Equil ";time;" Yr Saving=
 $";INT v'''Plus your labor of $";plct'
'"Total Equil Save=";TAB VAL "18";"$";v
t'''Saving at 6% is $";comp;(" Less." A
ND  vt<tott)+(" More." AND vt>tott)'''T
his is  "; INVERSE VAL "1";"$";INT (co
mp/time); INVERSE VAL "0";" Per Year"''
"Favoring ";("Saving." AND vt>tott)+("B
uying." AND vt<tott)'' INVERSE VAL "1";
"IF Your Bus Factors remain True"; INVE
RSE VAL "0"
9170 PRINT #VAL "0";"View Again? <1> Ye
s <2> No": PAUSE VAL "0": CLS : LET z=C
ODE INKEY$-VAL "48": GO TO (z<2)*VAL "9
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164"+(z>1)*VAL "9040"
9172 CLS : PRINT AT VAL "10",VAL "5";"S
ystematic Savings Plan": LET gg=VAL "0"
: LET a=VAL "0": LET v=VAL "0": LET m=V
AL "0"
9174 INPUT "Starting Savings to be Adde
d To (0 if None) $";beg: LET v=beg: INP
UT "Input Amount to Save Monthly     ";m
: INPUT "Input Interest Rate";i: LET in
t=i/VAL "1200": INPUT "Input Time in Ye
ars ";time
9176 FOR n=VAL "1" TO time*VAL "12"
9178 LET a=v*int: LET b=b+a: LET v=v+m+
a: LET v=INT (v*VAL "100"+VAL ".5")/VAL
 "100"
9180 NEXT n
9182 IF gg=VAL "1" THEN LET gg=VAL "0":
 RETURN
9184 CLS : PRINT AT VAL "10",VAL "0";"S
aving $";m;" For ";time;" Yrs at ";i;"%
"'"Provides a saving of $";v: PRINT #V
AL "0";"Enter": PAUSE VAL "0": CLS : GO
 TO VAL "9040"
9186 STOP
9188 CLS : PRINT AT VAL "4",VAL "16";"C
alculator Mode"'"<1> Single Add, Sub,
Mult, Div."
9190 STOP
9192 BORDER VAL "0": PAPER VAL "0": INK
 VAL "7": CLS : PRINT AT VAL "6",VAL "0
";"Mortgage Inquiry By Payment Nbr"
9194 INPUT "Beginning Loan Principle $"
;prin: INPUT "Input Points (0 if none)"
;pts: LET p=prin+((prin*pts)/VAL "100")
: LET p2=p
9196 INPUT "Input Rate of Interest %";i
1: LET i=i1/VAL "100"
9198 INPUT "Input Monthly Payment $";pm
t
9200 INPUT "Key in the Payment # to see
 the accumulated payments";m
9202 LET px=VAL "0": LET int=VAL "0": L
ET tab=VAL "26"
9204 FOR n=VAL "1" TO m
9206 LET i2=FN i()
9208 LET int=int+i2
9210 LET p=FN r()
9212 LET px=px+FN p()
9214 NEXT n
9216 PRINT '"MORTGAGE STATUS AFTER PMT
#"; INVERSE VAL "1";M; INVERSE VAL "0"
9218 PRINT '"Mortgage Points are ";pts:
 IF pts>VAL "0" THEN PRINT '"Beginning
Prin With Points is"'"$";p2
9220 LET x=prin: PRINT '"Beginning Prin
   =";TAB FN a();"$";prin''
9222 LET x=FN x(): PRINT "Principle Bal
    =";TAB FN a();"$";FN x()''
9224 LET x=int: PRINT "Interest Paid
 =";TAB FN a();"$";int''
9226 LET x=px: PRINT "Tot Paid to Prin
=";TAB FN a();"$";INT (VAL "100"*(prin-
p+VAL ".005"))/VAL "100"
9228 PRINT INVERSE VAL "1";"ENTER"; INV
ERSE VAL "0": PAUSE VAL "0": GO TO VAL
"9040"
9234 PRINT #VAL "0";"Enter": PAUSE VAL
"0": GO TO VAL "9040"
9236 BEEP VAL ".3",VAL "20": PRINT '' I
NVERSE VAL "1";"Points Actually RAISES
the APR  Interest Rate to Approx:  ";i+
pts/VAL "4";"%"'"By Increasing the Prin
ciple."; INVERSE VAL "0"'''"You should n
egotiate for a "; INVERSE VAL "1";"ZERO
 POINTS"; INVERSE VAL "0";" Contract ";
 INVERSE VAL "1";"Lower than ";i+pts/VA
L "4";"%"; INVERSE VAL "0"'"And Compare
 Payments."'''"The New Principal (Points
 Added) is: $"; INVERSE VAL "1";prin; I
NVERSE VAL "0": PRINT #VAL "0";"ENTER":
 PAUSE VAL "0": RETURN
9238 STOP : RANDOMIZE USR VAL "100": LO
AD "V-CALC.B6"
9239 STOP : LOAD /"V-CALC.B6"
9240 STOP : REM RANDOMIZE USR VAL "100"
: LOAD "Daisy.B6" GO TO fm
9241 STOP : REM LOAD /"Daisy.B6" GO TO
fm
9242 CLS : PRINT AT VAL "8",VAL "0";"In
vestment Gain at APR Interest"'"Compoun
ded Monthly"''
9244 INPUT "Enter Amount to Invest $";p
rin: LET v=prin: INPUT "Enter Annual In
terest Rate %";i: LET int=i/VAL "100":
INPUT "Time of Plan, (yrs or Half yr)
Yrs ";time: LET t2=time *VAL "12": LPRI
NT TAB VAL "8";"Investment of $";prin;"
 At ";i;"% For ";time;" Years"''
9246 FOR n=VAL "1" TO t2
9248 LET a=INT (VAL "100"*v*int/VAL "12
")/VAL "100": LET v=v+a: LPRINT TAB VAL
 "8";"Month #";n;" Int= $";a;TAB VAL "3
5";"Appreciated Prin=";v''
9250 NEXT n
9252 OUT VAL "127",VAL "12": GO TO VAL
"9040"
9254 REM ** Mortgage Cost per M
9256 LET ps=VAL "3": GO SUB VAL "9348":
 LET x=VAL "27": LET x1=VAL "9": LPRINT
 TAB VAL "38";"MORTGAGE LOAN COST BY $1
000 and TIME DURATON"''';TAB VAL "8";"T
able of Loan Cost Per $1000.00, by Rate
 of Interest and Number of Mortgage Yea
rs."''TAB VAL "8";"For Monthly Payment:
  Multiply Cost by Number of 1000's."''
TAB VAL "8";"For Total Mortgage Cost:
Multiply Cost times Nbr of 1000's times
 nbr of monthly pmts ."''
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9258 LPRINT TAB VAL "8";"For Total Inte
 rest cost: Subtract Beginning Principle
 from Total Mortgage Cost."'': LPRINT
TAB VAL "8";"Percent";TAB VAL "45";"Yea
rs of Pay Off / Cost Per $1000"'': LPRI
NT TAB x+VAL "2";"2 Yr";TAB x+xl+VAL "2
";"3";TAB x+VAL "2"+xl*VAL "2";"4";TAB
x+VAL "2"+xl*VAL "3";"5";TAB x+VAL "2"+
xl*VAL "4";"10";TAB x+VAL "2"+xl*VAL "5
";"15";TAB x+VAL "2"+xl*VAL "6";"20";TA
B x+VAL "2"+xl*VAL "7";"25";TAB x+VAL "
2"+xl*VAL "8";"30";TAB x+VAL "2"+xl*VAL
 "9";"35"''
9260 LET a=VAL "5": LET b=VAL ".5": LET
 k=x
9262 RESTORE VAL "9280": FOR n=VAL "1"
TO VAL "31"
9264 LPRINT TAB VAL "8";a;TAB VAL "12";
"%";"]- $ per M=";: LET a=a+b
9266 FOR y=VAL "1" TO VAL "10"
9268 READ z
9270 LPRINT TAB k;z;: LET k=k+xl
9272 NEXT y: LPRINT : LET k=x
9274 NEXT n
9276 LPRINT ''TAB VAL "8";"The table is
 for estimates.  Use the Amortization e
lective for a spreadsheet of a specific
 Loan."'TAB VAL "8";"Interpolations can
 be made between data points for estima
tions."''TAB VAL "8";"WORKING EXAMPLE:
 $10,000 Loan at 10% for 20 Years:"'
9277 LPRINT TAB VAL "8";"Use table line
 for 10%.  Use Column for 20 Yrs.  Cost
 is 9.65 per Thousand."'TAB VAL "8";"Mu
ltiply 9.65 times 10 (thousands)= $96.5
0 Monthly Payment."'TAB VAL "8";"Multip
ly $96.50 times 240 payments= $23160.00
 Total Cost"'TAB VAL "8";"Subtract $231
60.00 - $10000= $13160.00 Interest cost
."
9278 OUT VAL "127",VAL "12": GO TO VAL
"9040"
9280 DATA VAL "43.872",VAL "29.971",VAL
 "23.03",VAL "18.36",VAL "10.71",VAL "7
.65",VAL "6.45",VAL "5.79",VAL "5.38",V
AL "5.10"
9282 DATA VAL "44.096",VAL "30.196",VAL
 "23.257",VAL "18.65",VAL "10.51",VAL "
7.96",VAL "6.77",VAL "6.12",VAL "5.72",
VAL "5.45"
9284 DATA VAL "44.32",VAL "30.421",VAL
"23.484",VAL "18.94",VAL "10.81",VAL "8
.27",VAL "7.09",VAL "6.45",VAL "6.06",V
AL "5.80"
9286 DATA VAL "44.544",VAL "30.646",VAL
 "23.711",VAL "19.23",VAL "11.11",VAL "
8.58",VAL "7.41",VAL "6.78",VAL "6.40",
VAL "6.15"
9288 DATA VAL "44.768",VAL "30.871",VAL
 "23.938",VAL "19.52",VAL "11.41",VAL "
8.89",VAL "7.73",VAL "7.11",VAL "6.74",
VAL "6.50"
9290 DATA VAL "44.992",VAL "31.096",VAL
 "24.165",VAL "19.81",VAL "11.71",VAL "
9.20",VAL "8.05",VAL "7.44",VAL "7.08",
VAL "6.85"
9292 DATA VAL "45.216",VAL "31.321",VAL
 "24.392",VAL "20.10",VAL "12.01",VAL "
9.51",VAL "8.37",VAL "7.77",VAL "7.42",
VAL "7.20"
9294 DATA VAL "45.44",VAL "31.546",VAL
"24.619",VAL "20.39",VAL "12.31",VAL "9
.82",VAL "8.69",VAL "8.10",VAL "7.76",V
AL "7.55"
9296 DATA VAL "45.664",VAL "31.771",VAL
 "24.846",VAL "20.68",VAL "12.61",VAL "
10.13",VAL "9.01",VAL "8.43",VAL "8.10"
,VAL "7.90"
9298 DATA VAL "45.898",VAL "31.996",VAL
 "25.073",VAL "20.97",VAL "12.91",VAL "
10.44",VAL "9.33",VAL "8.76",VAL "8.44"
,VAL "8.25"
9300 DATA VAL "46.111",VAL "32.221",VAL
 "25.30",VAL "21.26",VAL "13.21",VAL "1
0.75",VAL "9.65",VAL "9.09",VAL "8.78",
VAL "8.60"
9302 DATA VAL "46.336",VAL "32.446",VAL
 "25.529",VAL "21.55",VAL "13.51",VAL "
11.05",VAL "9.97",VAL "9.42",VAL "9.12"
,VAL "8.95"
9304 DATA VAL "46.56",VAL "32.671",VAL
"25.754",VAL "21.84",VAL "13.81",VAL "1
1.37",VAL "10.29",VAL "9.75",VAL "9.46"
,VAL "9.30"
9306 DATA VAL "46.784",VAL "32.896",VAL
 "25.981",VAL "22.13",VAL "14.11",VAL "
11.68",VAL "10.61",VAL "10.08",VAL "9.8
0",VAL "9.65"
9308 DATA VAL "47.008",VAL "33.121",VAL
 "26.208",VAL "22.42",VAL "14.41",VAL "
11.99",VAL "10.93";VAL "10.41",VAL "10.
14",VAL "10.00"
9310 DATA VAL "47.232",VAL "33.346",VAL
 "26.435",VAL "22.91",VAL "14.71",VAL "
12.30",VAL "11.25",VAL "10.74",VAL "10.
48",VAL "10.35"
9312 DATA VAL "47.456",VAL "33.571",VAL
 "26.662",VAL "23.00",VAL "15.01",VAL "
12.61",VAL "11.57",VAL "11.07",VAL "10.
82",VAL "10.70"
9314 DATA VAL "47.68",VAL "33.796",VAL
"26.889",VAL "23.29",VAL "15.31",VAL "1
2.92",VAL "11.89",VAL "11.40",VAL "11.1
6",VAL "11.05"
9316 DATA VAL "47.904",VAL "34.021",VAL
 "27.116",VAL "23.58",VAL "15.61",VAL "
```

```
13.23",VAL "12.21",VAL "11.73",VAL "11.
50",VAL "11.40"
9318 DATA VAL "48.128",VAL "34.346",VAL
 "27.343",VAL "23.87",VAL "15.91",VAL "
13.54",VAL "12.53",VAL "12.06",VAL "11.
84",VAL "11.75"
9320 DATA VAL "48.352",VAL "34.771",VAL
 "27.57",VAL "24.16",VAL "16.21",VAL "1
3.85",VAL "12.85",VAL "12.39",VAL "12.1
8",VAL "12.10"
9322 DATA VAL "48.576",VAL "34.696",VAL
 "27.797",VAL "24.45",VAL "16.51",VAL "
14.15",VAL "13.17",VAL "12.72",VAL "12.
52",VAL "12.45"
9324 DATA VAL "48.8",VAL "34.921",VAL "
28.024",VAL "24.74",VAL "16.81",VAL "14
.46",VAL "13.49",VAL "13.05",VAL "12.86
",VAL "12.90"
9326 DATA VAL "49.024",VAL "35.146",VAL
 "28.244",VAL "25.03",VAL "17.11",VAL "
14.78",VAL "13.81",VAL "13.38",VAL "13.
20",VAL "13.15"
9328 DATA VAL "49.248",VAL "35.371",VAL
 "28.471",VAL "25.32",VAL "17.41",VAL "
15.09",VAL "14.13",VAL "13.71",VAL "13.
54",VAL "13.50"
9330 DATA VAL "49.472",VAL "35.576",VAL
 "28.698",VAL "25.61",VAL "17.71",VAL "
15.40",VAL "14.45",VAL "14.04",VAL "13.
88",VAL "13.85"
9332 DATA VAL "49.696",VAL "35.871",VAL
 "28.925",VAL "25.90",VAL "18.01",VAL "
15.71",VAL "14.77",VAL "14.37",VAL "14.
22",VAL "14.20"
9334 DATA VAL "49.92",VAL "36.046",VAL
"29.152",VAL "26.19",VAL "18.31",VAL "1
6.02",VAL "15.09",VAL "14.70",VAL "14.5
6",VAL "14.55"
9336 DATA VAL "50.144",VAL "36.371",VAL
 "29.379",VAL "26.48",VAL "18.61",VAL "
16.33",VAL "15.41",VAL "15.03",VAL "14.
90",VAL "14.90"
9338 DATA VAL "50.368",VAL "36.496",VAL
 "29.606",VAL "26.77",VAL "18.91",VAL "
16.64",VAL "15.73",VAL "15.36",VAL "15.
24",VAL "15.25"
9340 DATA VAL "50.592",VAL "36.721",VAL
 "29.833",VAL "27.06",VAL "19.21",VAL "
16.95",VAL "16.05",VAL "15.69",VAL "15.
58",VAL "15.60"
9341 REM ** Intfc and Printer
     Control
9342 BORDER NOT PI: PAPER NOT PI: INK V
AL "7": CLS : LET pg=NOT NOT PI: LET nn
=NOT PI: PRINT AT VAL "7",VAL "4";"Touc
h:"''TAB VAL "4";"<1> For TS-2040 Print
er"''TAB VAL "4";"<2> For Dot Matrix"''
TAB VAL "4";"<3> For Daisy Wheel";AT VA
L "18",VAL "7"; INVERSE VAL "1";"PRINTE
R MUST BE ON"; INVERSE VAL "0": PAUSE V
AL "0": LET z=CODE INKEY$-VAL "48": LET
 pr=z-VAL "1": IF z<VAL "1" OR z>VAL "3
" THEN GO TO VAL "9342"
9343 INPUT "Type DOS?: 1. Oliger 2. LKD
OS";dos: CLS : PRINT AT 5,0;"If Both LK
DOS and OLIGER DOS areResident:"''"1. Y
ou Cannot use ANY NMI"'TAB 3;"Function.
"''"2. For Oliger DOS, Switch OFF"'TAB
3;"the  LKDOS Enable Switch."''"3. For
LKDOS Switch OFF the"'TAB 3;"Oliger Boa
rd Enable Switch."''"4. DO NOT Enable B
ut ONE DOS"'TAB 3;"Printer Code.": PRIN
T #0;"ENTER": PAUSE 0: CLS : IF dos=1 T
HEN GO TO 9354
9344 IF pr=VAL "0" THEN RANDOMIZE USR V
AL "100": OPEN #VAL "7","LP": RANDOMIZE
 USR VAL "100": POKE VAL "16092",VAL "0
": GO TO VAL "9352"
9346 CLS : RANDOMIZE USR VAL "100": OPE
N #VAL "3","lp": PRINT AT VAL "10",VAL
"3";"ELECT Type CPI:"''TAB VAL "3";"[1]
 Aerco - Oliger"''TAB VAL "3";"[2] Tasm
an CPI"''TAB VAL "3";"[3] A & J CPI": P
AUSE VAL "0": LET a=CODE INKEY$-VAL "49
": PRINT #VAL "0";"Printer Need Line Fe
ed? <y> <n>": PAUSE NOT PI: LET w$=INKE
Y$: LET b=(VAL "10" AND w$="y" OR w$="Y
")+(NOT PI AND w$<>"y" AND w$<>"Y"): RA
NDOMIZE USR VAL "100": OPEN #VAL "4","d
d": RANDOMIZE USR VAL "100": POKE VAL "
16096",a: RANDOMIZE USR VAL "100": POKE
 VAL "16090",VAL "138": RANDOMIZE USR V
AL "100": POKE VAL "16092",VAL "0": RAN
DOMIZE USR VAL "100": POKE VAL "16094",
NOT PI: LPRINT : RANDOMIZE USR VAL "100
": POKE VAL "16092",b
9348 CLS : LET m=VAL "9350": OUT VAL "1
27",VAL "27": GO SUB m: OUT VAL "127",V
AL "120": GO SUB m: OUT VAL "127",VAL "
1": PRINT AT VAL "10",VAL "3";"SET PRIN
TER and Elect:"''TAB VAL "3";"[1] Pica
10 Cpi"''TAB VAL "3";"[2] Elite 12 Cpi"
''TAB VAL "3";"[3] Micron 15 Cpi": PAUS
E VAL "0": LET ps=CODE INKEY$-VAL "48"
9349 LET lx=(VAL "80" AND ps=VAL "1")+(
VAL "96" AND ps=VAL "2")+(VAL "120" AND
 ps=VAL "3"): LET qq=lx/VAL "2": OUT VA
L "127",VAL "27": GO SUB m: OUT VAL "12
7",(VAL "80" AND ps=VAL "1")+(VAL "77"
AND ps=VAL "2")+(VAL "103" AND ps=VAL "
3"): GO SUB m: OUT VAL "127",VAL "27":
GO SUB m: OUT VAL "127",VAL "120": GO S
UB m: OUT VAL "127",VAL "1": GO TO VAL
"9352"
9350 IF IN VAL "127"<>VAL "237" THEN GO
 TO VAL "9350"
```

```
9352 RETURN
9354 IF pr=0 THEN LET /p=t: GO TO 9352
9356 LET /p=o: POKE 23324,10: GO TO 934
8
9360 CLS : PRINT TAB 6;"Business Math C
alc"''"Rules:"''"1. Enter math sign (+
- / *)"'TAB 3;"a. Function continues un
til"'TAB 6;"q For QUIT is entered."''"2
. Each Entry is uses the LAST"'TAB 3;"T
OTAL for the NEXT CALC."
9362 PRINT "3. Inputs can be math formu
la."'TAB 3;"As: 4/2, 6*8, SQR 16, etc."
''"                                    "'TA
B 11; INVERSE 1;"Work Pad"; INVERSE 0
9363 LET q=9e12: LET a5=0: PRINT #0;AT
0,0;"Enter Function (+, -, /, *)": GO S
UB 9500: IF z=113 THEN GO TO 9040
9364 LET f5=z: IF z<42 OR z>47 THEN GO
TO 9363
9366 IF z=44 OR z=46 THEN GO TO 9363
9368 LET cx=0: LET xa=0: LET xb=0: LET
cc=0:: PRINT AT 16,0;"Use Constant? <y>
 Yes <2> no": PAUSE 0: IF INKEY$="y" TH
EN LET cx=1: GO SUB 9510: PRINT AT 18,0
;"                                    ": IF
 cc=1 OR cc=3 THEN INPUT "Enter Constan
t # ";xa
9369 IF cx=1 AND cc=2 OR cc=4 THEN INPU
T "Enter Per Cent";xb
9370 REM IF cx=1 AND cc=1 OR cc=4 THEN
INPUT "Enter #";xa
9372 PRINT AT 16,0;"
                ": IF cx=1 THEN PRINT AT 1
5,0;"Const=";(xa AND cc=1)+(xa AND cc=3
)+(xb AND cc=2)+(xb AND cc=4);(" " AND
cc=1)+(" " AND cc=3)+("%" AND cc=2)+("%
" AND cc=4)
9376 PRINT INVERSE 1;AT 19,0;("Add" AND
 z=43)+("Subtract" AND f5=45)+("Multipl
y" AND f5=42)+("Divide" AND f5=47)
9380 INPUT "First Nbr? ";a5: PRINT AT 2
0,0;a5;TAB 14;CHR$ f5
9384 IF cx=1 THEN LET a6=a5: PRINT AT 1
6,0;a6;TAB 14;CHR$ f5
9400 INPUT "Nbr?";b5: IF b5=9e12 THEN G
O TO 9360
9410 IF cx=1 THEN LET b6=(FN n() AND cc
=1)+(FN 1() AND cc=2)+(FN o() AND cc=3)
+(FN m() AND cc=4)
9440 LET a5=(a5+b5 AND f5=43)+(a5-b5 AN
D f5=45)+(a5*b5 AND f5=42)+(a5/b5 AND f
5=47): PRINT AT 20,15;b5: PRINT AT 21,1
5;"=";a5
9450 IF cx=1 THEN LET a6=(a6+b6 AND f5=
43)+(a6-b6 AND f5=45)+(a6*b6 AND f5=42)
+(a6/b6 AND f5=47): PRINT AT 16,17;b6:
PRINT AT 17,14;"=";a6
9480 INPUT "Nbr?";b5: IF b5=9e12 THEN G
O TO 9360
9482 IF cx=1 THEN LET b6=(FN n() AND cc
=1)+(FN 1() AND cc=2)+(FN o() AND cc=3)
+(FN m() AND cc=4)
9488 PRINT AT 16,0;"                ";AT
16,15;"                ";AT 17,15;"
          ";AT 20,0;"
";AT 20,15;"                ";AT 21,15
;"                ";AT 20,0;a5: IF cx=
1 THEN PRINT AT 16,0;a6
9492 GO TO 9440
9499 STOP
9500 PAUSE 0: LET z=CODE INKEY$: PRINT
#0;AT 0,0;"
   ": RETURN
9510 PRINT AT 15,0;"Constant Choices
          ""1. Increment Input with
 #       ""2. Increment Input with %"'
"3. Decrement Input with #""4. Decreme
nt Input with %"' INVERSE 1;"Then ";("a
dd" AND f5=43)+("Subtract" AND f5=45)+(
"Multiply" AND f5=42)+("Divide" AND f5=
47): INPUT "Enter Choice";cc:
9512 GO SUB 9530
9514 PRINT AT 15,0;"You are given Three
 Variables touse for Alternate Inputs a
,b,c""They can be + or - or Decimal
These can greatly increase your Calcula
tion functions.": BEEP .2,20: INPUT "In
put Three Values for a,b,c";a,b,c
9530 LET a$="
      ": PRINT AT 15,0;a$'a$'a$'a$'a$'a
$
9532 RETURN
9540 LET q=9e12: CLS : PRINT AT 4,8;"IN
TEREST CALC"''"<1> Monthly Interest on
X Amount"''"<2> Annual Interest on X"''
"<3> Cumulative Annual Int on X"''"<4>
Cumulative Monthly Int on X"''"<5> Depr
eciate at X Int, Y time"''"<6> Mark DOW
N by X %"''"<7> Mark UP by X %"'TAB 10
; INVERSE 1;"q to Quit"; INVERSE 0: PAU
SE 0: LET z=CODE INKEY$-48: IF z=65 THE
N GO TO 9040
9542 GO TO (z<1 OR z>7)*9540+(z=1)*9548
+(z=2)*9556+(z=3)*9562+(z=4)*9570+(z=5)
*9578+(z>5)*9586
9548 CLS : PRINT AT 10,0;"Monthly Inter
est on X"'TAB 10; INVERSE 1;"q to Quit
"; INVERSE 0''
9550 BEEP .2,24: INPUT "Principle? $";p
: IF p=9e12 THEN GO TO 9540
9552 INPUT "APR Interest Rate? %";int:
LET i=int/100: PRINT "$";p;TAB 8;"X (1/
12) of"; int;"% =$";FN i(): GO TO 9550
9554 INPUT "APR Interest Rate? %";i: LE
T int=i/100: PRINT "$";p;TAB 12;"(1/12)
 of"; X;"% =";FN i(): GO TO 9550
9556 CLS : PRINT AT 10,0;"Annual Intere
st on X"' INVERSE 1;"q to Quit"; INVER
```

```
SE 0''
9558 BEEP .2,24: INPUT "Enter Principal
 $";p: IF p=9e12 THEN GO TO 9540
9560 INPUT "Enter Interest Rate %";int:
 LET i=int/100 : LET an=INT (100*i*p+.5
)/100: PRINT "$";p;TAB 10;"X ";int;" %=
 $";an: PRINT #0; INVERSE 1;"Enter": PA
USE 0: GO TO 9558
9562 CLS : PRINT AT 10,0;"Cumulative An
nual Interest on X"'' INVERSE 1;"q to Q
uit"; INVERSE 0''
9564 BEEP .2,24: INPUT "Enter Principal
 $";p: IF p=9e12 THEN GO TO 9540
9566 LET a=0: LET b=0: LET c=p: INPUT "
Enter Annual Interest Rate %";int: LET
i=int/100: INPUT "Enter Nbr of Years ";
time: FOR n=1 TO time: LET a=FN h(): LE
T b=a+b: LET c=p+b: PRINT "Year # ";n;T
AB 12;"Int= $";a''"Accum Int= $";b''"Incr
eased Prin= $";c''
9568 NEXT n: PRINT #0; INVERSE 1;"ENTER
"; INVERSE 0: PAUSE 0: GO TO 9540
9570 CLS : LET tad=26: PRINT AT 6,0;"Cu
mulative Interest Monthly"'': BEEP .2,2
4: INPUT "Enter Principal $";p: INPUT "
Enter Time in Months ";m: INPUT "Enter
Rate of Interest %";int: LET i=int/100
9572 LET a=0: LET b=0: LET c=p: FOR n=1
 TO m: LET a=INT (100*FN h()/12+.5)/100
: LET b=b+a: LET c=p+b
9574 LET x=a: PRINT "Pmt # ";n;"  ";"In
t";TAB 15;"= $";TAB FN a();a': LET x=b:
 PRINT "Accum Int";TAB 15;"= $";TAB FN
a();b': LET x=c: PRINT "Incr Prin";TAB
15;"= $";TAB FN a();c''
9576 NEXT n: PRINT #0; INVERSE 1;"ENTER
"; INVERSE 0: PAUSE 0: GO TO 9540
9578 CLS : PRINT AT 6,0;"Depreaciation
over Time"'': BEEP .2,24: INPUT "Enter
Prin to Depreciate       $";p: INPUT "
Enter Total Time Yrs ";t: INPUT "Enter
Annual Depreciating Rate  % ";int: LET
i=int/100
9580 LET a=0: LET b=0: LET c=p: LET x=p
: PRINT "Start Principal";TAB 18;"$";TA
B FN a();p'': FOR n=1 TO t: LET a=INT (
100*FN h()+.5)/100: LET b=b+a: LET c=c-
a
9582 LET x=b: PRINT "Yr #";n;" Accum De
p=";TAB  18;"$";TAB FN a();b': LET x=c:
 PRINT "Depreciated Prin=";TAB 18;"$";T
AB FN a();c''
9584 NEXT n: PRINT #0; INVERSE 1;"ENTER
"; INVERSE 0: PAUSE 0: GO TO 9540
9586 CLS : PRINT AT 6,0;"Mark ";("UP "
AND z>6)+("DOWN " AND z<7);" by X %"''
INVERSE 1;"q to Quit"'' INVERSE 0
9588 INPUT "Enter Price ";c: IF c=9e12
THEN GO TO 9540
9590 LET tad=26: INPUT "Enter %";int: L
ET i=int/100: LET y=INT (100*FN h())/10
0: LET y=(y AND z<7)+(y*-1 AND z>6): PR
INT c;TAB 10;"- ";int;"%";TAB 17;"=";TA
B 20;"$";: LET x=c-y: PRINT TAB FN a();
x
9592 GO TO 9588
9800 LPRINT TAB 8;"TS-2068 Super Calc"'
'TAB 7;"For Oliger and LKDOS"''TAB 3;"D
onated to Public Domain By:";TAB 11;"Bi
ll Jones"''TAB 9;"The Main Menu"
9810 GO SUB 9342: POKE 23323,39: LOAD /
"cal.C2"SCREEN$
9900 FOR n=1 TO 22: FOR y=1 TO 32: LPRI
NT SCREEN$ (n-1,y-1);: NEXT y: LPRINT :
 NEXT n
```

<TRY goTo 9810 for MYSTERY Program>

QL Hacker's Journal

Supporting All QL Programmer's

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2nd September 1991.

Dear Frank,

I have been given your name and address by Bill Jones in connection with the UPDATE magazine for the TS2068 computer. He was unable to provide your phone number at the time so I am forced to resort to the slow method of using the mail.

I am Managing Editor of FORMAT, a magazine for serious users of the Sinclair Spectrum and the SAM Coupé computers. FORMAT has been published monthly since 1987, it tries to cover all aspects of the Spectrum and SAM Coupé market - EXCEPT games reviews. Our readership is now over 4500, and still growing fast.

We are looking to establish links with overseas user groups with similar areas of interest with a view to pooling information and sharing articles and program material. I am enclosing a copy of a resent issue which I hope you will find of interest. I hope you feel, as I do, that our magazines/clubs will benefit from closer ties.

We look forward to hearing from you in the near future, if like me you prefer the phone our number is Gloucester (0452) 412572 and our Fax number is (0452) 380890, or I will wait patiently for a reply by mail.

Yours sincerely,

Robert P. Brenchley,
Managing Editor.

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WHEN THEY BUILT THE TIMEX 2Ø68 COMPUTER THEY THREW AWAY THE MOLD!

That is true in more ways than one. It was an embarassment to BIG BLUE, a knotty personnel problem for TIMEX, and a disapointment to Mr. Sinclair.

Probably its greatest drawback was that it was ahead of its time. No other computer was so powerful and unbelievably cheap! If it had been built in Europe, instead of by an American corporation, the customer might have been served as a first priority -- on the proven principle that a good product will make money, not necessarily a good promotion.

It broke with Microsoft's chip and programming philosophy by using a time proven CPU,the Z8Ø. This CPU has its problems, but nothing like the clumsy and limited memory addressing scheme of the 8Ø86 family. Even now, with 8Ø286, 8Ø386, 8Ø486 ad infinitum, the questionable philosophy remains to confound the user, and increase cost.

Like any good tool, a CPU should not be loaded down with features that few will ever use. On the other hand, nearly universally used items like parallel, serial, and synchonous ports have a place -- as in the Z18Ø series from ZILOG. The SCLD is the companion of the Z8Ø CPU in the TS2Ø68 to provide special functions not appropriate for a CPU. It had one brilliant architectural innovation, the BE signal.

That single feature meant unlimited memory expansion without limiting in any way how it could be implemented. Realization that this was true gave the competition a migrain, and TIMEX fears that they could not control the peripheral market. It was just too EASY to support!

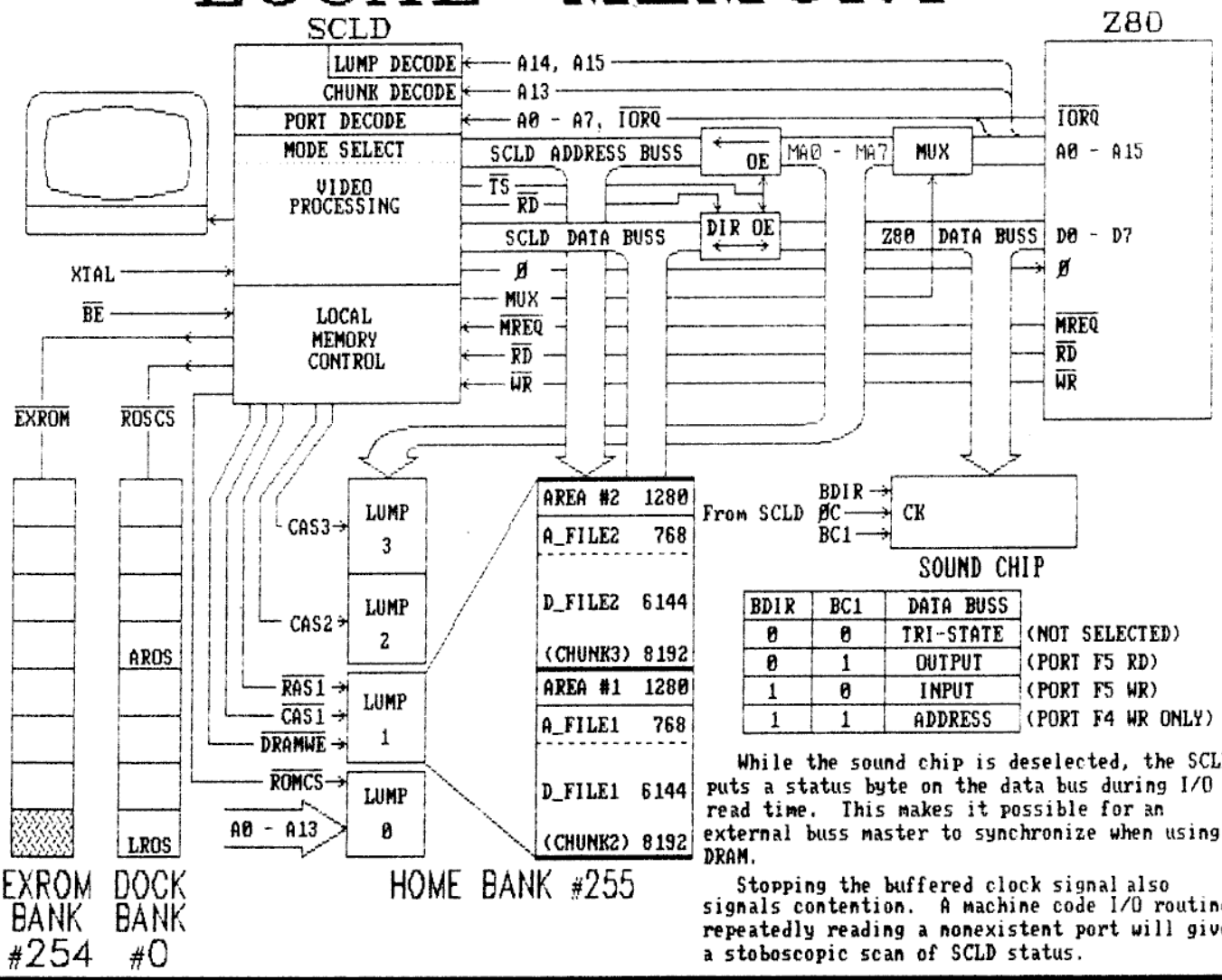
First of all, the TS2Ø68 architecture was designed to host any operating system. Spectrum ROMs hardly scratch the surface. For one reason or another the operating system was crippled so bank switching couldn't be used, the joystick ports were made useless for any other purpose by omitting required connections, and the units produced were dumped on the market. At the same time, a snow-job campaign about problems with programming, and lack of teamwork was launched to keep the real reasons (and the amazing capabilities of the healthy computer) from reaching the public.

Those who bought the snow-job looked for tricks, and ways to exploit the existing mess. Few recognized that the only mess was the sabotaged operating system. Those who proposed fixing it, were looked on as being a little -- strange? After all, if TIMEX couldn't do it, what chance did you have?

Times change. Now, it is not unusual for an amateur to program his own EPROMs and even PLAs. Operating systems no longer hold the programmer in awe. Lets FIX those marvelous TS2Ø68s that never got their place in the sun.

The diagram for the TS2Ø68's local memory shows how important the SCLD functions are. The timing chart for video data fetching has never been published before. Tests have proven that the SCLD has four T states to service each byte pair, but uses only three. The odd T state is made available to the Z8Ø CPU, allowing applications like DOS, which cannot stand extended delays. What a beautiful machine! NEW ROMS! NEW ROMS!

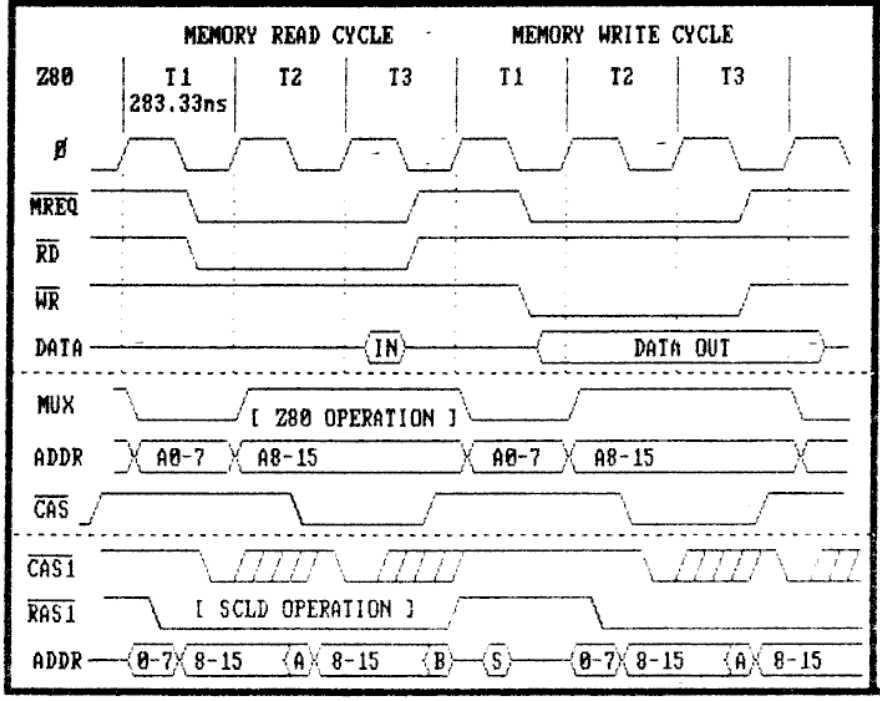
LOCAL MEMORY



BDIR	BC1	DATA BUSS	
0	0	TRI-STATE	(NOT SELECTED)
0	1	OUTPUT	(PORT F5 RD)
1	0	INPUT	(PORT F5 WR)
1	1	ADDRESS	(PORT F4 WR ONLY)

While the sound chip is deselected, the SCLD puts a status byte on the data bus during I/O read time. This makes it possible for an external buss master to synchronize when using DRAM.

Stopping the buffered clock signal also signals contention. A machine code I/O routine repeatedly reading a nonexistent port will give a stoboscopic scan of SCLD status.



The SCLD must access a pair of bytes every 1.134 us (4 T states of 283.33 ns each) when busy. At all times, it runs the address multiplexing for the CPU.

When busy, the SCLD multiplexes its own generated addresses, using RAS1 to access two related bytes with CAS1 done twice. The accessed bytes depend on the video mode.

MODE	byte 1	byte 2
0	D_FILE1	A_FILE1
1	D_FILE2	A_FILE2
2	D_FILE1	D_FILE2
6	D_FILE1	D_FILE2

Mode 2 uses D_FILE2 to provide an attribute byte for every pixel byte. This advanced color mode requires highly advanced programming techniques.

Mode 6 uses a predefined attribute for the entire screen. It outputs both bytes as pixel data at twice the speed, doubling the screen resolution, and allowing 64 or 80 characters to appear on each screen line.

USING THE LARKEN SEQUENTIAL/RANDOM FILING SYSTEM TO PRODUCE A TS2068 ROM DISASSEMBLY

Recently, I decided to develop a disassembly of the code contained in the TS2068 ROM. The procedure required the use of the Larken Sequential/Random filing system which is a software product available from Larry Kenny. The LKSR code allows for the saving and loading of as much data as can be held by one disk; whereas the Version 3 EPROM system is limited to 21 tracks per file name. Armed with both systems, I proceeded as follows:

STEP 1
LOAD DISASSEMBLER. OPEN SEQUENTIAL FILE VIA LKDOS.

My procedure for capturing the ROM consisted of first using the Larken Version 3 EPROM RND/SEQ commands to read the output from a disassembler onto a disk.

For a disassembler, I chose Monitor (aka Spectramon) with its deficiencies but with the advantage of sending a line feed every 32 characters. This character (13) provided a separator as required when using the Larken LBASE system. Monitor is a version of Spectramon which appeared in Personal Software back in 1983; I had converted it to TS2068 and mended a few errors in the mnemonics code, then compiled it using Timachine to make it run acceptably fast. (HOT Z is a very good disassembler but it sends no separator at the end of each disassembled line; it did not therefore fill the bill for this particular application.)

Having loaded Monitor, I then broke to BASIC and did <RANDOMIZE USR 100: OPEN #5,"ROM1 OUT"> to a selected drive with a fresh disk inserted; the drive turns as the file is opened. I returned to Monitor and started the readout at 0000H, setting the limit at 3CFF. The SAVE went very well with the drive whirring every little while as a track was filled; that is up to 21 tracks. At that point, the computer gave me a "DISK FULL" error report. I tried various tricks to get more than 21 tracks to load into one file name on the disk, but to no avail. (I later confirmed by telephone with Larry Kenny that 21 tracks is indeed the limit using the LKDOS EPROM.)

I continued on saving sections of code until I had finished the job: in four sections of about 20 tracks each. Each section required a different file name + OUT; ie, "ROM2 OUT","ROM3 OUT" and "ROM4 OUT". This ended the use of the LKDOS EPROM commands.

STEP 2
READ SEQUENTIAL FILE INTO LBASE VIA LKSR COMMANDS.

Now, I started to read these four files into LBASE (my 512 byte version); this employs the special Larken Seq/Rnd (LKSR) code imbedded in a REM line at the start of LBASE. This code must be purchased from Larry Kenny; he also provides a rudimentary form of LBASE which I developed into my version.

To do this, I MERGEd a special line 8030 contained on the disk as lbase.BM. Entering <GO TO 8000> started reading and saving 16 lines (512 bytes) into each record; as each file was read, the additional records were added onto the end of the previous data.

There was now no longer a problem exceeding 21 tracks.

When all was done, I loaded the complete single file into LBASE and scanned the results particularly around the "join" areas between the files. I found that I had missed two bytes in one instance and quite a few in one other case. I don't know why. Further examination revealed that the SAVE via the EPROM had indeed caught all the bytes; those that went missing seemed to have done so during the loading into LBASE. So my routine in line 8030 is suspect; however, I did not try to do anything with it as I could not see what I could do.

I got around it by writing some additional BASIC in LBASE to read and save records from a start number to an end number, using the TAB command and a simple FOR...NEXT loop. I read and saved all the records up to an including the one just before the missing two bytes. I then loaded this portion into LBASE proper <GO TO 1> and did an ADD to put the missing bytes into their own 512 byte record; next I started again with the next portion from just after the missing two bytes up to where I had missed quite a few. I repeated the same procedure, adding manually the code for missing bytes.

This area turned out to be the "constants" table and the "calculator" table which I typed in as DATA. I knew what the missing bytes were by having a copy of the disassembly of that area done with Monitor. Compressing the DATA into fewer lines left several records with redundant DATA which I erased line by line and simply marked them by entering "Blank Record".

There is a routine in my LBASE to copy a file and skip some records; this was a rather tedious job with close to 600 records and only a handful of blank records to erase, but it had to be done so I went ahead.

STEP 3
EDIT THE TEXT.

Now I had the rough ROM disassembly in LBASE format as opposed to LKDOS EPROM format. It now needed some considerable editing because there were still numerous tables and floating point calculator instructions that had to be deciphered manually. Fortunately, I had a copy of a Spectrum ROM Guide to help me locate and decode the tables and fp instructions. Most of these followed the Z80 instruction RST 28H (from two to many bytes) which turns on the fp calculator; as well as some single byte error codes following RST 08H. Some disassemblers identify these bytes as DEFB but Monitor does not. In any case, locating RST 08H and RST 28H always identified the following bytes as DEFBs.

During this process, I had to use some short forms to conserve space on individual lines and these were for the fp instructions. Here are a few examples with some brief notes:

DEFB CODE	MEANING	SOME SHORT FORMS
38H	fp exit	fp ex fpex fpx
(this is the byte that turns off the fp calculator)		
04H	multiply	mult mul
C3H	store 3	store3 stor3 st3

```
 (store 3 puts a result into Memory area 3 of 6)
31H          copy       cpy    cy
 (this really makes a duplicate of a result)
01H          exchange   exch   exc
 (a becomes b and b becomes a in Memory)
E2H          get 2      get2   gt2
 (fetches the byte stored in Memory 2)
00H          j true     j tru  jtru  jtr
 (jump relative if the result is true (1); followed by a
  displacement byte, say +4)
```

Toni Baker wrote a series of articles for ZX Computing in 1986 which gave very good coverage of the Floating Point Calculator and if you are interested in this subject, you should have that series.

SUMMING UP

Finally, I had all the tables and the fp instructions done; what you would see on the disk as the file "ROM" is the result. It is quite conceivable that there are some errors in my work. Using LBASE, it is easy to correct them and I'll do that as they are discovered.

My intention in doing this exercise was to build the ROM Guide to be able to use it mainly via the screen, yet to make copies as necessary to do a closer analysis of a particular area of code.

Making a complete hard copy was not my intention but it could be done. There would be some gaps wherever there were blank lines on the screen. Use <PRINT USR 100: LPRINT "name" to make the hard copy.

The code now uses up 55 tracks for over 273 kilobytes, ie, almost 280,000 bytes. It is difficult to imagine how all this data could be captured, edited, searched and saved to disk with the limited memory of the TS2068. I don't have many requirements for storing such a lot of data but this example shows that it can be done using the Larken LBASE code and the enhanced BASIC that I have developed and used.

I have provided a copy of the disassembly on disk to UPDATE MAGAZINE; it may be read or printed using the Larken LKDOS PRINT or LPRINT commands, but this is rather tedious and it would be better to access it using the LBASE program. To repeat, you must purchase the copyrighted code from Larry Kenny and then use my LBASE.

END

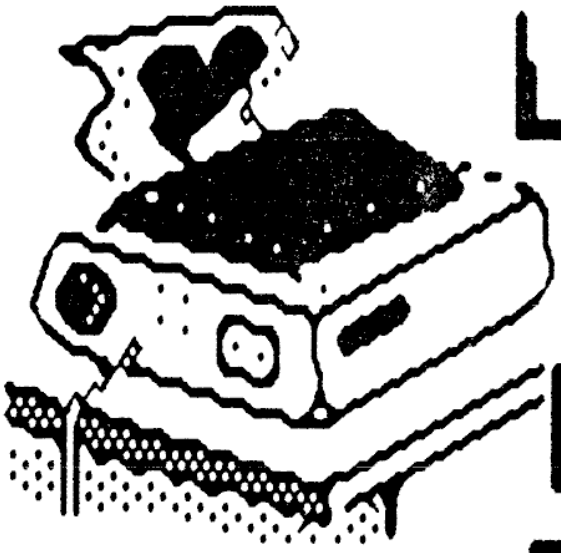
FOR SALE: Super TS-2068 SYSTEM

Components	Used Value	Notes
TS-2068 Computer	$85.00	Excellent condition. Has flip switch to select RGB Monitor, Composite Monitor, or Television.
RGB Monitor	$150.00	A nice crisp 14" RGB Color Monitor with hook-up cable.
Oliger 4 port expansion buss	$40.00	Has RGB Monitor Interface and 4 expansion slots.
Oliger DOS System	$160.00	2 Board DOS system. V2-52 EPROM which provides Dual DOS, the capability of operating both Oliger DOS and Larken DOS, either as Single DOS or Combined DOS. Also copies disks of either format in same or opposite format.
Larken DOS Dock Cartridge	$65.00	LKDOS Cartridge provides LKDOS when used with one or two of the Oliger disk interface boards.
Larken 256K RAM DISK	$120.00	256K Ram Disk and Extra Memory. Chips installed. Operates either as RAM DISK or Extra Memory for Programming.
Quad Disk Drives	$300.00	2 DSDD 40 track and 2 DSDD 80 track drives in four drive Beige cabinet with HD Power supply.
Oliger Centronics Printer Interface	$30.00	Interface for Printers.
64K Printer Buff Buffer	$125.00	An intelligent printer buffer that allows Data Hold or Combine and output to one or two printers
A/B Switch	$10.00	The A/B switch allows input to the above buffer from one or two computers and output from the buffer to one or two printers. The text data from two softwares or two computers can be combined into one document for print out.
Z/SIO Interface	$90.00	An intelligent RS-232 Serial interface. The principle use is for Telecomputing with:
Avantex Modem 200/1200 baud	$100.00	Telecomputing Modem. Connects to phone line.
Zebra OS-64 Cart	$30.00	Provides 64 Column Screen and 64 Column programming system.
32K NVM Cart	$60.00	Dock Cartridge that provides 32K battery held Extra Memory. Usable in Dock or XROM Banks.

Total Used Value: $1365.00 SALE PRICE= $750.00 with all cabling. Also includes an entire library of software mostly for LKDOS and Oliger DOS, plus many books and manuals.

OPTIONAL: Panasonic KXP-1124 Printer: $225.00. All software set up for use with this excellent 24 pin printer. (Cost $380.00 and is in New condition).

CALL TO RESERVE: Bill Jones, Tel: 904 871 4513



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DESK-TOP PUBLISHING?

Why the question mark?

While discussing this subject, there is often confusion between methods and results. In actuality, only the results are published. The methods are a means to that end, and are important insofar as ease of use is concerned.

RESULTS

Results appear first on a dot matrix printer having both built-in fonts and various graphic modes. Unless you really stretch your printer's capabilities, you do not EVER go backwards. Attempting to do so requires special techniques to compensate for paper tension and backlash. Reserve this for cases where you want to use the printer as a plotter, perhaps to fill in a predefined blank area on your document.

Aside from using your printer as a plotter, you can work with its built-in fonts, or use any of its graphic modes.

When using built-in fonts, operation is still dot matrix, but the internal graphic program for fonts does tricks that are difficult to duplicate using its user graphic modes. Because ALL operations are dot matrix it is easy for the printer to know exactly where it is with respect to a standard page format. (This is not always true when using plotter type instructions.) One example of internal tricks is "double strike". The printer makes a second pass with the paper advanced 1/2 the pin spacing (1/72"), or 1/144". This trick is automatically utilized any time near-letter-quality (NLQ) fonts are being processed.

A second trick is using dot positions in between those that are described in the manual. "BOLD" is accomplished usually, but not always by printing intermediate dots. The exceptions provide special "BOLD" fonts in NLQ format. NLQ operation also uses these intermediate dots at the expense of reduced printing speed.

The DOT MATRIX GRID:

There are two major classes of dot matrix 8 or 9 pin printers. The first class includes the IBM Proprinter and Star, among some others. (The GORILLA BANANA and OLIVETTI PR2300 are in classes by themselves.) These printers have a smallest paper feed of 1/144".

The second class includes EPSON and true compatibles -- even some Star models. These have a smallest line feed of 1/216" as specified, but also have a line feed of 1/144" in order to do double strike characters. Internally EPSON deals with paper advances of multiples of 1/432", but there are no user instructions which make use of this resolution.

The new generation of 24 pin printers gains speed by making essentially three passes into one. For internal operation, this makes NLQ font processing much more efficient. A small price is paid, however, in compatibility with older graphic modes.

Horizontally, you might think that there are 960 dots. In quad-density graphics, some of these dots are printed at intermediate positions, so 1920 dot positions are available. Actually there are a lot more positions available than that, about 5000 in fact. If you doubt this, compare font horizontal dimensions and compute the least common denominator.

The count of horizontal and vertical elementary steps is what the printer uses to keep track of its position on the predefined page, width and length.

EPSON GRAPHIC MODES

With the advent of the EPSON, with its page location cursor memory, it became possible to intermix various graphic modes, and even font operation in a single page line. The necessary printer instructions were provided, but it was left up to the user to figure out what to do with them. This support vacuum meant that only gifted programmers were able to write printer drivers, and most applications were designed to match PC, XT, and other more professional applications. 24 pin printers cater to this application market by providing emulations for CGA, HERCULES, EGA, and some VGA video modes. EPSON 9-pin printers provide only one graphic mode of this type. It is graphic mode #5 which prints a true 1:1 aspect ratio (square) dot pattern. For the TS2Ø68, it is the only mode which reproduces the screen exactly for dumps and selected screen window mappings.

The WIDJUP Co. has prepared an EPSON printer driver and an EDITOR to make it easier for the user to compose his own documents to his own specifications. This includes ALL windowing operations needed to format a full page. Using this facility in a higher level program allows these functions to occur invisible to the user, who can then forget everything but his publication page.

FILLING THE VACUUM

The WIDJUP EDITOR "GRAPHISON" allows you to divide the printed page into single lines, groups of lines, and segments of single lines. When a single line is subdivided, the pieces are designated "L" for left end, "M" for one or more middle pieces, "R" for right end, and "C" for a complete line with both ends. Each of these pieces define a window on the document page. Each window requires a corresponding set of printer commands plus mapping this window somewhere on the screen.

Using graphic programs, these mapped printer windows can be filled with whatever your heart desires. If immediate printing is not desired, SCREEN$ files can be stored to disk, including a flag section identifying which printer command set(s) apply. A single screen can have several windows mapped to it, so efficient storage can be achieved. LARKEN has been working on a similar method.

With the WIDJUP approach, existing graphic programs can be used to create SCREEN$ files. CAD#3 uses this method to create exquisitely detailed printer circuit board masters --a very special type of full-page document.

Whereas data files cannot be contained in limited memory, you can store printer command sequences and the commands themselves for several pages if wanted.

Fortunately for TS2Ø68 users, its video generator (SCLD) is compatible with 8-pin printer graphics. Eight vertical dots on the screen correspond to printer pins. What this means to you is that 8x8, 8x16, 16x16 bit mapped fonts are most easily handled.

Graphically generated fonts are less easily employed because each character must be divided among several window maps. This means that parts of large characters appear on different screens. This is where a good compositing program can be useful.

PHOTOGRAPHIC PRINTER WINDOWS

The concept of "PIXEL" is well understood as the smallest element in a black/white image. With audacity, I use and propose the usage of the term "GIXEL" for the smallest element for gray scale dot matrix reproduction.

There have been some rather clumsy techniques recently published to take advantage of the Ontario club's design for a video image capture board. GRAPHISON and a WIDJUP grey scale graphics generator are sufficient to create any picture you want from a sequential file of gray scale integers in CHR$ form, or as stored in a memory block.

For highest EPSON resolution and size, each video scan line would have to be sampled 240 times. Groups of four scan lines are needed to integrate gray value over a 4x4 area instead of a dash shaped image fragment. This gives 4x4 "GIXEL"s in 17 shades of gray. Not all shades need be used, and more shades would not improve the average picture much. This gray scale utility is also used to print a colored screen dump sideways in shades of gray corresponding to colors. PIXELs become GIXELs. The 256x176 pixel screen image becomes a 704x1024 dot printer image.

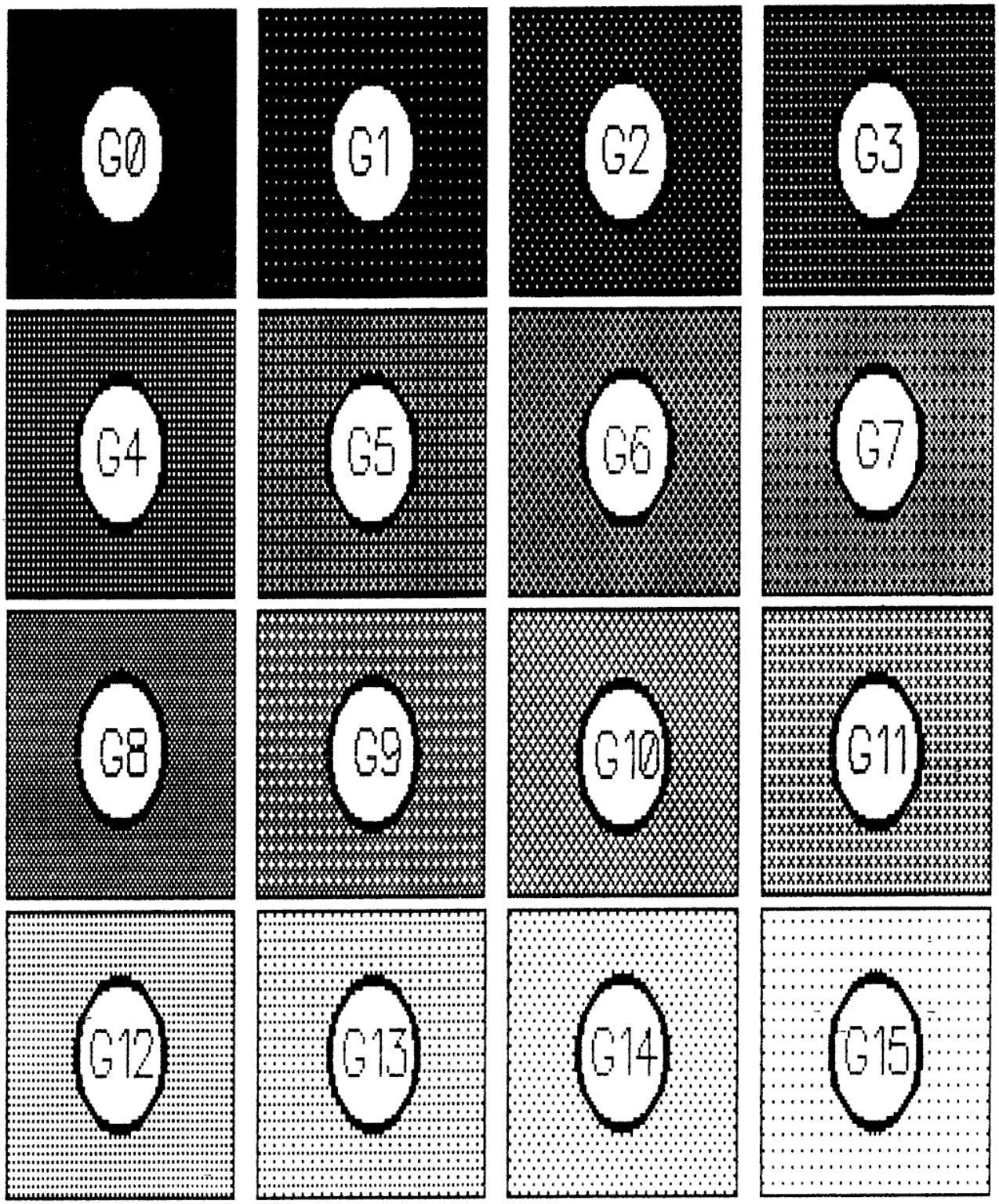
SUMMARY

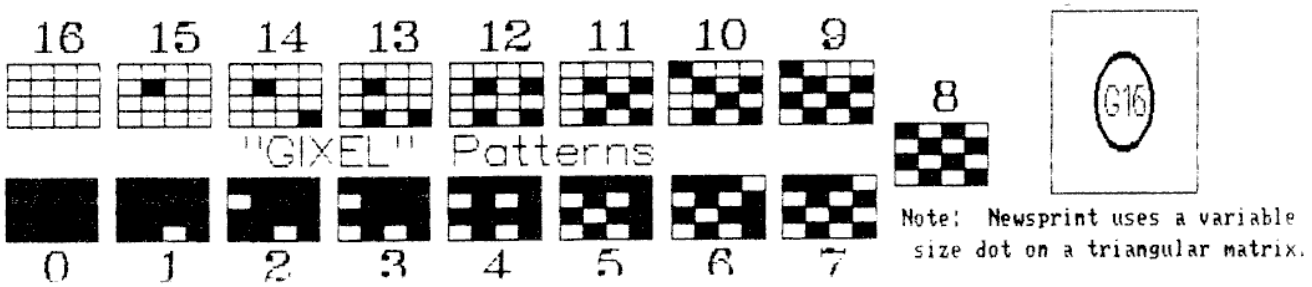
Available desk-top publishing programs suffer from a common problem. Instead of creating general purpose printer drivers, and taking advantage of high resolution video modes, the first workable solution was siezed upon, creating all kinds of incompatibilities. TS2068 advanced video modes have been just about delegated to history by programmers who insist on violating the rules for remapping memory. DOS systems similarly create mayhem with bank switching rules. Excuses have replaced fixes.

All is <u>not</u> lost. Most existing programs can write to SCREEN$ files. Video capture boards can be compatibly programmed. If high resolution screens cannot presently be used, the availability of a video capture board should encourage its use.

A big help is being able to <u>see</u> what can be done. To merely criticize, without offering better things, is cruel. Please see the graphic samples submitted with this article.

Bill Pedersen, The WIDJUP Co.





Note: Newsprint uses a variable size dot on a triangular matrix.

Gixel patterns selected for minimum texture. Nominal for dot matrix.

MECHANICAL AFFINITY GARAGE SALE

The following are now available from Mechanical Affinity for your Sinclair home or business computer. All items listed are available in quantity. Orders may be placed by check or money order to either Paul Holmgren,5231 Wilton Wood Ct., Indianapolis In, 46254 317-291-6002 , ...or to Frank Davis, 513 East Main St., Peru, In 46970 317-473-8031. Do not make the check out to Mechanical Affinity. All Prices include Postage already! BEST WISHES FOR THE UPCOMING HOLIDAY SEASON AND HAPPY COMPUTING. TO OBTAIN OUR NEW EXPANDED CATALOG WITH NEW ITEMS, PLEASE SEND A LARGE SELF ADDRESSED STAMPED ENVELOPE TO EITHER OF THE ABOVE ADDRESSES. All funds are in U.S. dollars, and include postage except where noted.

BOOKS

SYNCWARE NEWS Vol. 1 $8 All volume 1 issues bound in one book
TOURING THE TS2068 ROM OPERATING SYSTEM by WIDJUP $12
QL TECHNICAL GUIDE $15
QL SERVICE MANUAL $12

extras & new items

Replacement or backup power supply for the QL, no serious user should be without one (personal opinion). $15

Micro Drive Cartridges 4 for $15

MDV labels, 3 sheets for $1.25. For the QL.

QL replacement membranes for keyboard $15.

Disk Drives, half height 3 1/2 and 5 1/4. Order from Paul at $55 @ for 3 1/2 or 5 1/4, or $165 for dual 3 1/2's w/ case & power.

Panasonic KX-3131 Daisy Wheel Printer, with extra ribbons and print wheels for $115, includes P. & H. Parallel Interface.

Towa Daisy Wheel Printer with extra ribbons and print wheels, parallel interface, QUME compatible for ribbons and print wheels. For only $115, includes P. & H.

5 1/4" DSDD or DSQD disks with Tyvek sleeves-- 100 for $18.00 delivered free.

Cumana Disk Interface with toolkit, handles up to 4 drives, no extra memory for $75. For QL only.

IBM Keyboards, 101 keys PC-AT types, for $15 each.

LOTUS 1-2-3, new never used fullpackage with registration papers for only $75. For IBM or Compatible or QL IBM Emulator.

Commodore 1520 Color Plotter Printer with John McMichael Board that allows this to be used on TS2068 with Oliger motherboard. Includes software, all for only $100.

Rotronics Wafadrive, two 128K stringy floppy drives, parallel and serial printer ports, Spectrum mode only, with cables, for $90.

NEW

GOLD CARD FOR THE QL. THIS ALLOWS YOU TO HAVE 2 MEG OF MEMORY, 16 MEGAHERTZ SPEED. upto 4 times the present speed of your QL, AND USE UPTO THREE DRIVES INCLUDING THE 1.4 AND NEW 3.2 MEG DRIVES. HAS FULL TK2 AND EVEN INCLUDES THE CODE FOR OPERATING A WINCHESTER HARD DRIVE (hard drive interface and hard drive not included). All of this for only $500 plus $10 for insurance and handling. We take care of any import duty. Prepayment and please allow extra time for shipping.

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The Sinclair Desktop Publishing Journal

Volume 2 Issue 3 Summer 1991
Edited By Mike Felerski

Happy Summer to All Our Readers!

From the Editor

As editor of the Sinclair Desktop Publishing Journal I would like to wish all our readers a happy summer. Summer usually means lawn work, picnics and vacations. It also means that the old TS2068/Spectrum may be shelved or at minimum, sit idle and collect dust.

Well, I beleive there are all types of summer uses for your Sinclair, be it 1000, 2068, QL or Z88. This issue of the SDPJ will explore some of the "Summer" Desktop Publishing uses, but DTP is not the only area. Take for instance Bulletin Boards. Cool summer nights are great for dialing up BBSs. Maybe you have taken a week or two off from work to paint the house...That afternoon heat is not only bad for you but it is also bad for the paint, so why not convert a few icon files from cassette to disk?

This Issue....
NEW DTP IDEAS
DISCOVERIES
THE COMPANION
NEW GRAPHICS
PIX-FX REVIEW

And while we are on the subject of home repairs, don't forget the various "Home Improvement" programs available as well as "Auto Analyzer" for all of that repair work! Finally, you can use your Sinclair as an education suppliment for the kids while school is out.

In all, it seems a shame that most computers sit idle during the summer months. Like anyone else I enjoy being outdoors as much as possible while the weather is warm and pleasent. But that does not mean that computers have no place in our lives during the summer months--they just may be used to suppliment summer activities...

...Mike Felerski, Editor.

The Companion Arrives at the SDPJ Office

It arrived on a Monday. That was very good. Monday was not a happy day at work. My wife was out of town, and the house seemed very empty. Such a small package of four cassette tapes could not have been more welcome. Yes, Byte Power's Print Factory Companion had found its way to the humble office of the Sinclair Desktop Publishing Journal!

(See The Companion on page 3)

Larken Plus Swoger Kit =Spectrum Solution

Product: Spectrum Emulator
System: TS2068
Required: Larken DOS Cartridge
Cost: Approx. $12

Bob Swoger is well known in Larken DOS circles for his LogiCall DOS shell program which provides easy (often single key) access to Larken DOS commands. What is little known about Bob is that he can provide Larken DOS cartridge owners Spectrum emulation add-on kits for the Larken DOS cartridge.

The kit consists of a 14 pin gate chip, a 28 pin Spectrum emulation ROM and socket and the necessary wire to add the parts to your existing Larken DOS cartridge.

The socket is soldered to the 8K RAM chip on the cartridge, and the gate chip is soldered to the center 14 pin chip. A jumper wire is then run from the gate chip to the ROS Enable solder hole on the cartridge, and from the gate chip to the 28 pin socket. Finally, the Spectrum ROM is placed into the socket and then the cartridge is inserted into the TCC (Timex Command Cartridge) port.

Now, in order to operate your TS2068 as a Spectrum, you hold down the "K" key as you power up your 2068. If you are already powered up, your can execute an OUT 244,3 command which will (reset your computer and) put you in the Spectrum operating system.

(See Emulator on page 3)

IDEAS

Summertime DTP

As I mentioned on the front page of this issue, summertime is not well associated with computer play. Let's face it, most everyone prefers to be out doors during the summer, especially if you live in the north east. Besides, even if you prefer to stay indoors, there are always a million things which will have to be done around the outside of the house. So, whether or not you are an indoor or outdoor summer person, this Summer Idea section of this issue of the SDPJ should apply to everyone! I know when many people think of desktop publishing, all that comes to mind is the "N" word--newsletter. This is where I think most people miss the mark. We already know that software packages like Byte Power's The Print Factory provide programs tocreate "Desktop Published" labels, but let's toss some more ideas around...

As spring begins so does spring cleaning. And what could be more North American than a garage sale! Garage sales are a haven for signs, posters and banners. These are usually created using pieces of leftover cardboard and an El Marko. But this year, why not create signs using First Edition, or Zebra/RMG Poster Maker. Some of those 48 point fonts ought to catch peoples eyes'. And the best part of it is that all you have to do is create one copy, and photocopy the rest...or print each one out on colored papers. Then at the sight of the sale itself, a giant banner could be created using Byte Power's or Zebra/RMG's Banner designer programs. Maybe, by using desktop publishing to create your signs, people might believe that you have some pretty good junk to sell!

Spring is also the time when many a Sinclair user gathers up his/her tools of the earth and begins the great task of gardening. Most gardeners I know take the time after planting to stake out each row of flowers or vegetables with a small sign indicating what was palnted there. Usually these planting flags are created using the empty seed packets...but why not create some of your own using desktop publishing. Why, you could even layout your garden plans the winter before using a combination of garphics and DTP programs.

As summer moves into full swing, a variety of activities begin to flourush. Desktop publishing could be used to design posters showing the way to the company or family picnic. Even maps and instructions to graduations could be desktop published. Summer sports is another area for summer desktop publishing. The immediatly thought is that baseball, softball or soccer playing schedules and lineup cards could be fabricated. You could even create concession stand menus (which many league parks could really use)!

Now, if you are more of an indoor summer person, you could placate young children on summer break by playing "Picture Bingo". Picture Bingo cards can be made using Byte Power's First Edition and the various graphic images (or converted Zebra Icons) available. Flash cards could also be made.

And finally, those early evenings are a great time to organize that big old box of recipes, so why not DTP them? But what ever you do this or next summer don't forget that desktop publishing isn't just for newsletters and cold winter nights!

DISCOVERIES

First Class Fonts II & Disk Systems

The Discoveries section of the Journal presents thoses little surprises that people find when "playing around" with software products. This issue passes on information from Dennis Clinton of Tujunga CA regarding conversion of Byte Power's First Class Fonts II for use with TS2068/Spectrum disk systems.

The Winter 1991 issue of the SDPJ, it was noted that the First Class Fonts II program was un-breakable (due to what was later discovered as an ON ERROR RESET command). Dennis points out: "Fortunately, that is not so: There is a way to BREAK into the BASIC for modifications, or what ever" (i.e. conversion of the program to disk I/O.

Dennis goes on to explain how this is accomplished:

'First, select the "File" option at the Main Menu. The select the "Quit" option. In response to the 'are you sure' query, press any key, (other than "N"), then BREAK. "A PAUSE 120" delay provides enough time. Then, to return to the program, RUN."

Dennis states in his letter that he discovered this "purely by chance". When I first saw Dennis' letter I tried his suggestion for BREAKing the program and it worked straight off. I then proceded to modify the BASIC so that the program would SAVE, LOAD and CAT via my Larken Disk interface. It works like a charm.

Hats-Off to Dennis Clinton for his excellent First Class Fonts II discovery. If you have a desktop publishing "Discovery" please drop us a letter or postcard describing your Discovery to:

The Sinclair Desktop Publishing Journal
c/o Mike Felerski
1284 Brushwood Avenue
Cincinnati, OH 45224

PIX-FX: Not Another Graphics Program!

Product: Graphics Manipulator
System: TS2068
I/O: Cassette & Disk Vers
Cost: Approx. $17.50

So, if it is not another TS2068/Spectrum SCREEN$ graphics program, what is it? Well, the author describes it as: "...a unique collection of SCREEN$ manipulation utilities designed to help (you) create your won special picture effects from one or several SCREEN$s".

PIX-FX allows the user to take a standard TS2068/Spectrum SCREEN$ graphic and magnify, reduce a specified "window" area of the SCREEN$ as well as transfer it to another SCREEN$ in a "Cut 'N Paste" manner. The program will also "...render a 3-dimensional perspective view of any SCREEN$...". There is also a utility called the "Planet Maker" which which "folds" a SCREEN$ around a spear of any size!"

Now that we know what it is, how do we use all of these utilities? Well, it is simple because all of the utilities are contained in PIX-FX and are accessed via pull-down menus (this author's favorite way operate). There are four pull-down menus which are arranged in, more or less, a tree structure: The PIX-FX (Main) Menu, the Help Menu, the SCREEN$ Storage Menu, and the LOAD/MOVE Pic Menu.

The Help Menu provides information on the program itself, its conventions, how to use the Planet Maker and Prespective utilities and the other features as mentioned above. SCREEN$ Storage speaks for itself. It provides for viewing, SAVing, LOADing, and TS2040 COPYing of the final SCREEN$.

Finally, there is the LOAD/MOVE Pic Menu. It handles the copying, LOADing and Swapping of the Final Screen (FS) and the Working Screen (WS) in memory. It acts as a sort of mini-RAM Disk memory manager of the two SCREEN$s. For instance, if you wish to LOAD a SCREEN$ into the Working Storage area, you select the SCREEN$ Storage Menu, then select the LOAD/Move SCREEN$ option, after which you will be presented with the LOAD/MOVE Menu. Here you can select where you wish the SCREEN$

(See PIX-FX on page 4)

Emulator

(from front page)

What you are thinking now is: "What does this have to do with Desktop Publishing?" I will tell you. After two years of borrowing my wife's Rainbow Interface (a Spectrum Emulator and back-plane twister board) I finally decided that I needed some sort of "ROM" switch for the times when I wanted to work with Word-Master (remember, Word-Master is a Spectrum program). Thanks to Larry Kenny and Bob Swoger for making our computer lives a little easier.

For more information on the addition of a ROS ROM (i.e. Spectrum OS, OS64, etc.) see the last two pages of your Larken Disk Owners Manual or contact Bob Swoger or Larry Kenny:

Bob Swoger
Gator Software
613 Parkside Circle
Streamwood, IL 60107-1647

Larry Kenny
Larken Electronics
RR 2
Navan, ONT K4B-1H9
Canada

The Companion

(from front page)

The Companion is a package of Super Large Screen sets, Graphic Design Files, Super (font) Sets, Letter Perfect fonts, Double Height fonts and standard size graphic SCREEN$s for use with Byte Power's Print Factory suite of desktop publishing programs. The Companion even includes a special Gorilla Banana Aerco and Tasman printer driver!

The Super Large Screen sets are pictures "that can be used with The Press in your documents". These screens are usually larger than the normal 32 characters by 24 line screens. Some of the Super Screens are 80 characters wide by 50 lines high (characters based on 8x8 pixels). Each Super Screen is made up of several standard screens placed side by side to create the full size Super Screen.

The Graphic Design Files include 22 Figures, 7 special Office, 17 Nature, 19 Religion and 71 General graphic designs to compliment the Graphic Design Files which come with the original Print Factory programs.

The Super Sets are eleven additional "Super Size" fonts which are LOADed into the Print Factory programs just like the Graphic Design Files. Thirteen were included with the Print Factory suite and these additional eleven include bolds, scripts, and extra fancy Super Set fonts. The largest font is a whoping 56 Point!

The Letter Perfect fonts are, of course, for use with only the Letter Perfect program. The fonts included are a Bold, a Bold 2, a Tall and an Avanti font. There are also Double Height fonts for use with The Press program. Included are Brush, LCD, Legend, Script, Garita and five others.

Finally there are 60 standard SCREEN$ files which range from TV screen snaps to artwork and cartoons. There is also a 450 byte Gorilla Banana printer driver. The print driver loads at memory location 64000 and allows the Gorilla Banana printer to emulate 8 pin printers so that the Gorilla can work with all of the Print Factory programs.

Basically, if you do not own The Companion, now is the time to buy it. Just for the Super Sets, Graphic Design Files and Super Screens alone The Companion is worth its price. The Double Height fonts and Letter Perfect fonts are very nice to have as well. SCREEN$s are always a tough sell but several of the 60 are excellent with most of the remaining being average.

New Print Factory Graphics Now Available

Since you are reading the Sinclair Desktop Publishing Journal, then you must be an Update reader (if not, then it must be a bootleg copy--so get your Update subscription TODAY!) So I am sure you have already seen the ads for John McMichael's collections of Print Factory graphics...but did you know he now offers a third graphics collection? That is right, three individual collections!

In a recent letter published in July-August SINC-LINK (the Toronto Users Group newsletter), George Cary of Coloma, CA states "For an investment of $26.95 for the three disks" (of graphic collections), "you get about 445 graphics of various sizes which LOAD into any of the Print Factory programs." George also states that, "If you buy (collections) £1 & £2 at $17.95 (US), you can buy £3 for $7 - all ppd."

What does this mean? It shows that desktop publishing support continues...and therefore, the SDPJ will be around in 1992. Look for a "Graphics" issue this fall!

Dealer Spotlight

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Voice: (213) 759-7406
BBS: (213) 971-6260 (8/N/1)

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1748 Meadowview Avenue
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1710 Palmer Drive
Laramie, WY 82070

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1419 1/2 7th Street
Oregon City, OR 97045
(503) 655-7484

PIX-FX

(from page 3)

to be LOADed to (FS or WS) or MOVEd to. The Final Screen and Working Screen can even be Swapped, which can be an extreamly useful feature. In all, SCREEN$/File manipulation is very flexable.

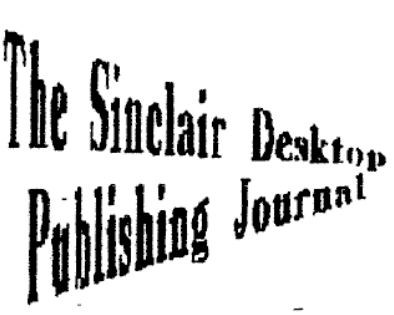
As mentioned, the original version comes with SCREEN$ LOADing and SAVing via cassette in BASIC. Included are instructions on converting the BASIC code to LOAD and SAVE to alternate (i.e. Disks, Wafers, etc.) storage devices. There are also disk versions of PIX-FX available for a slightly higher price over the original package.

As an example of what can be done as a PIX-FX beginner, my first real project was to take the SDPJ masthead and do two things: First, enlarge it height wise, and second, give it some perspective. The original masthead is really a SCREEN$ which was created using Word-Masters Headliner program. Typeliner then doubles the size of the masthead SCREEN$ to produce what you see on the front page of this issue.

So, I took the original masthead SCREEN$ file and doubled the height of the area of the SCREEN$ which contained the letters themselves (see lefthand figure). Next, I used the Perspective utility to give the letters of the masthead that "Going Out into Space" look. I wanted to see how much was really lost or distorted during a Perspective operation. The result is the SCREEN$ which appears on the righthand side.

Although some resolution was lost due to using one utility after another on the same screen, the end result was not bad at all. As a matter of fact, the two figures on this page are un-retouched (keep in mind they have also been converted by Typeliner to be placed on this page).

There are only a couple of quirks to the program which can be annoying. Although the TS2068 Left Joystick port can be used to select pull-down menu options, the joystick cannot be used to control cursor positioning for selecting working window areas. The other strange operation of the program is its need to go to the LOAD/Move Menu at the beginning of each operation as a "just in case you forgot" feature for setting up the SCREEN$s.



To say that PIX-FX is just another SCREEN$ utility is almost 100% off course. PIX-FX provides SCREEN$ manipulations which are near impossible to find in any other graphics program. It is a "Must Have". (For further information, contact Ed Grey Enterprises at the address listed above).

The Making of this Issue...

All four pages of this issue were created using Word-Master for text editing, Typeliner (a Word-Master utility) to format each page. PIX-FX was used to create the figures on page 4 and Quick-Screen (from Print Factory) and The Companion to create the "In This Issue" box on the front page. The article headers, IDEAS & DISCOVERIES were created using Pixel-Print (honest!)

LETS READ T/S 2068 JLO DISKS WITH YOUR QL

Well, here it is. You can read Timex 2068 Oliger disks with a QL with nothing more then a disk interface and ToolKit II. This is made easy due to the simplicity of the methods used to store information on the 2068 JLO system. At this time and present configuration a "basic" read is all this set of procedures does. Working out a set of "conversions" for the way Sinclair Basic is stored becomes fairly easy once you can get a file into the QL.

Now for the PROCedure explanations.

DEF PROC QL, this let me "see" the structure of a QL disk. Working with ASCII (text) files made it somewhat easy to study the methods used to store files and how they are distributed on the side, track, and sectors of a QL disk. I was able to develop a "memory map" of a QL disk this way.

DEF PROC INN, this was used in part with the PROC QL to help control my peeking about the QL disks. I typed INN, answered the prompts, then typed in QL.

DEF PROC OPN, this asks you which drive to look at. Opens a RAM disk file, and "OPENs" the target disk. So far, in all the experimentation with this utility I have NOT harmed a 2068 disk at all. But it is best to work on a copy of your disk.

DEF PROC TIM, this is meaty. It will read a sector of the 2068 disk and print it to the screen. It then asks if you want to transfer the material to the ram disk file, if so, then COPY the 10 sector block of "data" to the ram disk.

DEF PROC DISK_IT, does the actual copying of the track. Since I use the program "EDITOR SE" I use line 520 to print to the ram file the source track, side, and sector I was currently reading. It may be deleted if you wish.

DEF PROC AA & PDET, these just print information to the QL screen.

DEF PROC CLO, as far as the QL and my TRUMP card are concerned, this PROC was necessary. When you are done copying a file to the ram disk, it needs to be closed. The TRUMP card needs to see that the disk is "closed" the 2068 does not care.

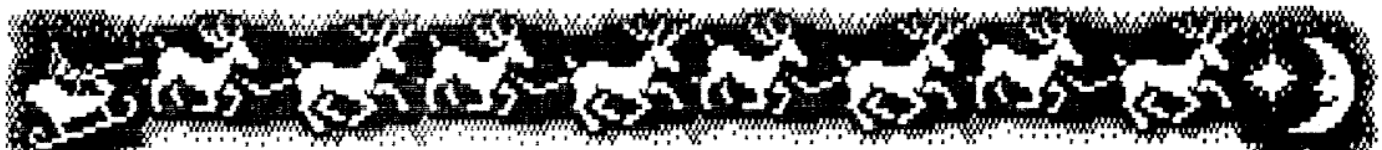
DEF PROC REST, sets the drive heads to track, side, and sector 0, or "Parks" the drive heads if you need it.

These are the steps I use. So far, I am toying around with text files from MSCRIPT and TASWORD, and data files from PRO-FILE. For 2068 disks I type OPN (enter), then type TIM (enter), get the file(s) I am interested in, then CLO (enter).

Copy the ram file to a QL disk. Then load QUILL of EDITOR to work on the file to clean up and stray unwanted contents. This method "gets" all of a track (5120 bytes). So the file will have some "garbage" following any useable data to the end of the file. Usually just spaces or some such.

Experiment, use, enjoy, or just fool around with this. I believe that this can work on AERCO and LARKIN disks once you understand how they write to the disks. If you try this, you need to experiment with the FOR/NEXT loops in the PROC TIM.

```
100 DEFine PROCedure rest : GET #4\257,a$ : a$='' : END DEFine
110 :
120 DEFine PROCedure opn
130 CLS : INPUT \\\'Which drive ?  ( 1/2 ) ';dr
140 OPEN_NEW #3,raml_2068_files : OPEN #4,'flp'&dr&'_*d2d'
150 END DEFine
160 :
170 DEFine PROCedure clo : CLOSE #3 : CLOSE #4 : END DEFine
180 :
190 DEFine PROCedure aa : PRINT a$ : END DEFine
200 :
210 DEFine PROCedure ql
220 LOCal track , side , sector
230 inn
240 FOR track = 0 to trk-1
250 FOR side = 0 to 1
260 FOR sector = 1 to 9
270 REMark rest
280 pdet
290 GET #4\sector+side+256+track*65536,a$ : aa
300 IF pause$=="y" THEN : PAUSE(-1)
310 END FOR sector : END FOR side : END FOR track
320 END DEFine
330 :
340 DEFine PROCedure tim
350 REMark   JLO DOS uses track 0, sectors 1-10 for CAT and LOADER software
360 inn
370  FOR track = 0 TO trk-1
380   FOR side = 0 TO 1
390    FOR sector = 1 TO 2
400    REM rest
410    pdet
420    GET #4\sector+side+256+track*65536,a$ : aa
430    END FOR sector
440   CLS #0 : PRINT #0 : INPUT #0,"Relocate this side and track ? ";ans$
450   IF ans$=='y' THEN : disk_it
460    END IF : CLS #0
470   CLS : END FOR side : END FOR track
480 END DEFine
490 :
500 DEFine PROCedure disk_it
510 FOR sector = 1 TO 10
520 GET #4\sector+side+256+track*65536,a$
530 PRINT #3,'sector ';sector,'track ';track,;'side ';side\a$
540 END FOR sector
550 END DEFine
560 :
570 DEFine PROCedure pdet : PRINT 'sector ';sector,'track ';track,;'side
    ';side : END DEFine
580 :
590 DEFine PROCedure inn
600 CLS : CSIZE 1,1 DIM(pause$(1) : INPUT \"PAUSE ? ";pause$
610 INPUT \ '40 or 80 Tracks? ';trk
620   IF trk <> 40 AND trk <> 80 THEN : GO TO 610
630  END IF
640 CLS : CSIZE 0,0
650 END DEFine
```



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We at Ed Grey Enterprises want to wish all of you, and your families, the very best and safest of Holiday Seasons. Please remember that ALCOHOL and GASOLINE do not mix. Let's all hope for PEACE in 1992.

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I am proud to announce that Ed Grey Enterprises is now a distributor for the JLO (Oliger) Disk Interface for the T/S2068. It controls up to four 5.25" and/or 3.5" disk drives, and it leaves the cartridge port free for your Spectrum emulator or other eprom. The JLO Disk I/F, as well as all the other Oliger hardware, is available as bare boards (no parts), kits (boards and parts), or fully assembled and tested. This is the EASIEST TO USE and the EASIEST disk system for the 2068. FULL SUPPORT for JLO users is a reality, and it will continue. Also ask about disk drives, cases and cables.

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CABLE COLUMN

By Bill Cable

ARCHIVE SERIES
PART 6 : FIND,SEARCH,CONTINUE COMMANDS

I continue my coverage of ARCHIVE with some of fun commands that allow us to find things in a database. Before getting into that I want to present an updated version of a chart giving some time comparisons between QLs and PCs. Some may remember this chart from the April 1990 issue of UPDATE. I recently had a chance to time a QL equipped with a Gold Card and thought others might find the comparisons interesting.

The chart was made by running my ARCHIVE program. DBEasy, on both the QL and PC and timing the various tasks. The PC and QL versions of DBEasy are written in the respective QL and PC versions of the ARCHIVE language and the code is very similar. This should not be considered the last word in comparisons because there are some differences in the software. Still it is nice to have numeric comparisons. The numbers are time in seconds.

DBEasy Task	QL 7Mhz	PC 4Mhz	XT+ 8Mhz	AT 10Mhz	AT 20Mhz	QL GOLD 16Mhz
Load Up	69	94	57	48	10	22
Find "xxx"	15	17	11	9	2	4
Step 10 records	58	50	19	12	8	20
Display New Page	17	20	7	5	2	4
Sum on population	13	9	4	2	1	2
Order by country	13	18	9	7	1	6
Locate 'SWEDEN'	4	4	2	2	1	1
Select 'EUROPE'	19	24	12	7	2	3

Note that the QL/Gold Card is about 4 times faster than a regular QL. Also a QL/Gold Card is pretty comparable and sometimes faster than a 10Mhz AT machine. The Gold Card makes the QL a very respectable computer by current standards of processor power and many think QDOS is still the best operating system around. Before the Gold Card. it was easier to abandon the QL for a PC. Now it is much harder to decide. There are strong arguments both ways as Al Feng brought up last issue. Some like myself will work in both worlds. I don't have my own Gold Card yet but will get one as soon as finances allow.

FINDING THINGS IN A DATABASE

Locating needed information in a database is extremely important. The main reason we structure our information in database form is so we can find it again quickly on demand. ARCHIVE provides two means of 'slow' searching for information - FIND and SEARCH. To use either one we specify the command with a condition or value to match on and ARCHIVE will start at the beginning of the database testing record by record until a match is made or the end of the file is reached. The match becomes the current record. We are also provided with an associated command, CONTINUE, which will start up the last FIND or SEARCH (whichever was most recent) from the next record after the current record (not the beginning). It is a way to continue a SEARCH or FIND after a match so the next match can be found. There is also a numeric function provided, FOUND(), which is 1 or 0 depending on whether the most recent FIND, SEARCH, or CONTINUE had a successful match.

PREPARATION

In the description below I will underline what you should enter to participate in the examples. In preparation start up ARCHIVE and access the supplied GAZET_DBF with the LOOK command and display it.

```
look "{}gazet"<ENTER>      {}=device, mdv1_, etc
display<ENTER>
```

FIND COMMAND

The find command is a very simple and very thorough way to find text in a database. Its drawbacks are its speed and its indiscriminate nature. Since it must compare all text in the database when trying to make a match, it takes time. If the database is small then find works very well. If the database is large and what you are looking for is near the end then it could take some time before the FIND makes a match. The FIND command is not case sensitive (ignores upper and lower case differences). It does not work on numeric fields. It has the form :

find (text in quotes or text variable)<ENTER>

Try these examples with the GAZET database :

```
find "london"<ENTER>
find <ENTER>                ARCHIVE puts quotes
paris<ENTER>
let a$="south"<ENTER>
find a$<ENTER>              use variable for text
continue<ENTER>             find next "south"
find "xxx" ><ENTER>         something not there
print found()<ENTER>        see found()=0
display<ENTER>              restore database display
```

SEARCH COMMAND

The SEARCH command is a little more complex to use than the FIND command but can be more specific and maybe faster. It is still a slow way to find things in a large database. The SEARCH command cares about upper and lower case in text but case sensitivity can be suppressed if desired. The SEARCH command has the following form:

search (numeric expression)<ENTER>

When a search is initiated ARCHIVE goes to the beginning of the file and checks record by record until the numeric expression is true (nonzero) and stops or until it reaches the end of the database. The numeric expression is usually a logical expression (evaluating to zero or nonzero) involving one or more fields of the database. Because complex logical expressions can be used in the SEARCH command it is a very important database tool. Try the examples below.

```
search continent$="africa"<ENTER>          fails
print found()<ENTER>     equals 0  africa not upper case
display<ENTER>           restore database display
search continent$="AFRICA"<ENTER>      now works
print found()<ENTER>     equals 1  verifies success
display<ENTER>           restore screen
search continent$="AFRICA" and pop>20<ENTER>
continue <ENTER>         find next one
<F5><ENTER>              save on typing
<F5><ENTER>              look for more
```

As you can see we can fairly rapidly find all countries in africa which have a population of more than 20 million. SEARCH unlike FIND also works with numeric fields.

```
search pop>50 and pop<70<ENTER>
```

I would recommend becoming familiar with the ARCHIVE functions as they allow much more flexibility with the SEARCH command and many other commands. Look up each function used below in your ARCHIVE manual to learn more about it. If you see an unfamiliar expressing followed by something in parenthesis then you have found an ARCHIVE function. ARCHIVE does not allow user defined functions so the only ones that exist are listed at the end of the ARCHIVE section of your QL manual. ARCHIVE functions evaluate either to a text value (string) or a numeric value. Numeric values can be used as logical type where zero is false and nonzero is true. Below I illustrate some common uses for functions within the SEARCH command.

Suppress case sensitivity

```
search lower(continent$)="africa"<ENTER>     or
search upper(continent$)="AFRICA"<ENTER>
```

Search for text within field

```
search instr(lower(languages$),"bantu")<ENTER>
while found():continue:sprint:endwhile<ENTER>
```

Use string splicing

```
search continent$(1)="A"<ENTER>
```

Note that if a record had no entry for the continent$ field we would get an error since continent$(1) does not exist for that record. This would find any empty continent$ fields:

```
search continent$=""<ENTER>                  or
search len(continent$)=0<ENTER>
```

CONTINUE COMMAND

As mentioned above the CONTINUE command allows for continuing on after a SEARCH or FIND match so the next match can be found. If for some reason you change your current record after something was found and then did a CONTINUE, ARCHIVE will begin the CONTINUE on the record following your current record (not the record found). You can repeat continue as many times as desired to work your way through the database. After you reach the last match your current record will not change because the CONTINUE could not make any more matches. You have no direct evidence of a SEARCH, FIND, or CONTINUE failure except that the current record doesn't change. The value of the FOUND() function always indicates the outcome by its value if you check it. FOUND()=0 then failure or FOUND()=1 success.

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(THIS LEAFLET WAS PRINTED WITH A QL & QUILL AND A MANNESMANN MT81)

Service Charges for SINCLAIR/TIMEX Computers Revised May 1, 1991

Prices do not include shipping and handling charges.
Shipping charges will vary depending upon weight, distance and method.
I will ship via the cheapest method unless you specify otherwise.
The minimum handling charge for shipping is $2.00.
There may also be a surcharge for repairing modified equipment.
The minimum surcharge is $5.00.

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   MIRACLE Centronics

2. The following items will be repaired for $10.00 each + parts & shipping:
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3. The following items will be repaired for $15.00 each + parts & shipping:
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   LARKEN 1000 FDI CST FDI
   MIRACLE 512K

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IBM ARCHIVE to Z88 DIARY: By Chris Fenn

Here is a small procedure that will let you EXPORT a file from PSION's ARCHIVE program that will then load into the Z88's built in DIARY program. The procedure was written on the IBM clone I use at work, but it should work on the QL's version of ARCHIVE as well.

This proc is intended to be used on data files that are dated, so when they are loaded into the Z88's DIARY program each entry will fall into it's own date slot.

Part of my responsibility at work is to insure that work orders that come into the shop get completed in a timely fashion. We could have over 100 work orders active at any given time, all with varying due dates. Although I can achieve this on the desktop computer, sometimes it is very handy to be able to go into the production area armed with the info. in hand, and the Z88's DIARY program makes it very easy to manipulate dated info. and create lists & reports.

You will have to customise the proc to suit your particular needs and deal with your own field names.

```
proc zdiary
 reset
 select status$="ACTIVE"
 rem selects active workorders
 first
 spoolon "ZACTIVE.DIA" export
rem prints data to the text file ZACTIVE.DIA on disk
 while not eof()
  rem continue until the end of the file is reached
  let zdate$=date$(4 to 6)+date$( to 3)+date$(7 to 10)
  rem converts the DATE(2) format to the European format
 lprint "%"+zdate$
  rem this is what DIARY looks for to know where it goes
  lprint "CLIENT: ";client$
  lprint "JOB# ";job$;" PO# ";po$;" PART# ";partno$
  lprint "DESCRIPTION: ";desc$
  lprint "SHIP ";shpqty;" PCS. OF ";type$;" DUE ";duedate$
  rem print the info.
  lprint
  next
```

```
endwhile
spooloff:rem close file
endproc
```

It does not matter if the entrys are not arranged in chronological order as DIARY will rearrange them.

FIELD variables=status$,date$,client$,job$,po$,partno$,desc$,shpqty, type$,duedate$ (date$ must be in date(2) format)

After the file is transfered to the Z88 using the PC link program (or it's QL counterpart), load it into PIPEDREAM first and resave it using the PLAIN TEXT option. It can now be loaded into DIARY but it might be a good idea to resave it from DIARY.

This is how the records look when converted & loaded into DIARY:

ACME SLOT MACHINES
JOB# 3375 PO# 4569 PART# RJW1LC-3
DESCRIPTION: YELLOW
SHIP 100 PCS. OF REEL GLASS DUE 08/23/1988

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The Q[*old_s*]LAW Project
By Al Feng

Qabbage was once the vegetable of royalty. Somewhere along the way it became peasant food. Now, qabbage is classified as a health(y) food ...

... Having said that via the maddingly silent QLatter of a SINCLAIR keyboard (no, I haven't gotten around to getting a Falkenberg keyboard interface, yet), when last we chatted I had lamented the tardiness (for me) of the GOLD CARD and its current high cost (in US terms) -- *unintentionally, I'm sure, some of my previous words* ***were expunged,*** *making the opening paragraph a bit non-sensical ... So be it ... Perhaps the editor thought the entire contents was non-sense, and so eliminated a few of the words to make it sound a bit off (I think there may be a pun here, but you decide).*

The distribution by Sohail Bhatti's QLAW questionnaire has netted a yield of only a 2% response *(according to Dennis Briggs, September 1991 QUANTA, page 16).* **Unfortunately, Dennis fails to indicate the total basis and/or geographic distribution for this value.** Does this mean that out of perhaps 1,000 (minimum estimate of QL WORLD's distribution + additional **mailings to User Groups), only 20 people** mailed responses? Or, does number indicate subscription reponses? Is Dennis counting the insert which was included in the July 1991 QUANTA? That certainly ups the starting count somewhat.

Well, no matter ...

At this point, the best hope that QL users have for continuation of the species is for MIRACLE to either wrest (i.e., "buy") patents and copyrights from AMSTRAD; or, for AMSTRAD, MIRACLE and QVIEW to form a partnership by which AMSTRAD takes advantage of MIRACLE's cumulative hardware technology, and QVIEW's firmware technology (i.e., MINERVA); and, the lesser two take advantage of AMSTRAD's distribution and production capabilities.

Why am I suggesting some form of *detente?* What exactly might the GOLD CARD mean to the QL user?

What I didn't know before (a lot ... about many subjects), but what I know about the GOLD CARD that I didn't know before (especially) was that it dumped the QL's operating system into what is referred to as SHADOW RAM. Using SHADOW RAM is a common practice with high-speed PC's to move the firmware (maintained within slower EPROMs) into the computer's faster RAM.

What this means, is that the original QL has become little more than an I/O expansion card for the diminutively sized **GOLD CARD.**

Now, if AMSTRAD, MIRACLE, and QVIEW could get together, then a third generation QL could easily be made to fit into a case no larger than the original QL for not much more than the original QL. Again, feasibility of such speculation is contingent on AMSTRAD's distribution and production clout.

Unfortunately, neither QLAW *(due to external apathy as evidenced by the apparently small response to the questionnaire)* nor QUANTA *(due to internal apathy on the part of QUANTA's half-hearted board)* can provide the appropriate "third horse" for a successful troika that AMSTRAD can/must provide for the QL and QDOS to survive this decade as a viable computing platform.

Now, die-hard QL users should realize that I may yet get a GOLD CARD (someday) ... I'll get a GOLD CARD (sooner) if someone out there wants to give me about $300 for my MIRACLE 512K EXPANDERAM and DISK CARD interface. Otherwise, I'm afraid that the $500+ price is still too dear for the likes of me. And, my next $500 of computing-dollars will probably go toward a portable computer (so I can peck away at the keyboard away from an AC outlet) or an AT-class clone which will give me the effective speed of the GOLD CARD for *another universe* of out-of-the-box applications ...

... My pronouncements should not be taken as a "rat" surveying the deck of a sinking ship, but rather an advisement to those with significant financial interest as to where I *[YOUR PAL, AL]* would rather spend my future computing dollars. That is, it should be taken as advice to MIRACLE, *et al,* that they had better come to terms with AMSTRAD if they don't want to be last weekend's leftover QOLD_SLAW.

Let's hope for a healthy future for the QL and its users ...

HAPPY TRAILS, AND COMPUTING, TO YOU!

COMMENTS FROM THE EDITOR

Frank W. Davis

I have to say that I do resent the statement that some of the words were "expunged" from Al Fengs article of last issue. Not one word was left off of the DOC file sent to me on disk. As I have stated previously in the I.S.T.U.G. newsletter, of which I also edit, I do not want to get involved in ANY squabbles between any TS2068, QL or Z88 user, user group, club, dealer, etc. The purpose of this magazine is to publish articles that are of interest and educational to the user, not to foster ill feelings. We are willing to look at the opinions of all and hope to publish accurately to the best of the ability of the writers and of ourselves. I must also state that I do not agree that a consortium of AMSTRAD, MIRACLE AND QVIEW are the QL's last hope. Last, but not least, I have a Gold Card and love the user power it allows me as a user, with the extra memory and speed.

NEWSREPORT ON THE COMPUTERFEST by E. P. Wannum

All of our readers will have noticed that Frank and Carol have been giving heavy support to the Computerfest at Dayton the end of August. As I attended the Fest I thought a few words would be appropriate. This is what your roving reporter and poet found. Speaking of poetry, are any of you interested in programs that will write poetry for you?

What can be said about the Dayton Computerfest? I am glad I attended, as it was my first experience with a show of this size and I was pleasantly surprised in most ways. Parking was easy and the exhibit hall was not too far off the beaten track. What I missed most that I had enjoyed at the Midwest Sinclair Shows of the past was having the show at the motel you were staying at. It is really nice when you want to take a break from a show just to walk down a hall to your room. Or to invite someone back to your room to try out a new piece of hardware or software you just picked up. Pleasant memories of past shows! Fear not...this does not mean I did not enjoy Dayton, just reminiscing.

The official tally of all who went to the show was 15,414, according to the loudspeaker near the end of the second day. There was a large assortment of user groups there, the largest being the Commodore and Amiga user groups (they seem to out number the IBM user groups!). The number of Sinclair groups present was about equal to the number of Mac groups there, with a smattering of Radio Shack, Zenith and Atari. The vast majority of professional tables were IBM hardware and software, along with those selling monitors, disks, drives, etc. that were useable on most any system. I even found a Chiropractor' booth giving diagnoses and taking appointments. Too bad they were not giving adjustments; they would have made a small fortune.

Who was there? Well, there was Ruth Fegley, Audrey and Bob Curnutt and Dave Bennett from the CATS Group had a booth. They were even helping out Mark Stuber of Sharp's by selling QL related items for him, so he could tend to his IBM compatible booth. He was taking orders for the new Gold Card for the QL at $599 each.

Neal Schultz and Bill Heberlein were there representing SMUG and operating a booth to sell assorted hardware and software. This is the first show I have seen them at without Dick Cultice. They always seemed like the three musketeers before, so I hope to see him again at the next show.

Bill Angel of ISTUG was there flea marketing used QL software and hardware. ISTUG also had a booth there and put out free samples of their newsletter, the International QL Report, EMSoft's sales flyer, and flyers for QUANTA. Paul Holmgren, the North American QUANTA Librarian was there. I have to really thank him for the service he has provided for me. The QL library they have is really great. For those interested in finding out more , then write him at 5231 Wilton Wood Court, Indianapolis, Indiana 46254.

Steve Spalding was there, selling a lot (and I mean a lot!) of Spectrum Software, all of it on tape. With him was a guy named Keith Watson of 41634 Amberly Drive, Mt. Clemens, Michigan 48044, who has developed an alternative DOS for the Aerco Disk Interface for the TS2068.

Bob Swoger and a guy named John (last name unknown) were there representing CATUG. I sure wished that Al Feng had been

there, as I have really admired the work he has done to develop QL software here in the States.

Carol Davis, Frank Davis and Paul Holmgren were there to represent Mechanical Affinity and sell TS2068, TS1000 and a lot of QL hardware and software. They seemed to be the busiest Sinclair booth at the show. They were also taking orders for the new GOLD CARD for the QL. They are still taking orders for them and I believe that the price is $500 plus $10 for postage and handling. I think this is the cheapest U.S. price.

Carol and Frank Davis were also there selling new copies of The QL Survivors Guide, of which I recently got a copy. For a mere $5.00 (plus $2.00 P & H if by mail) I now know where to go for all the known software, hardware, publications, users groups and repair facilities for the QL. Not just in the States, but around the world. They said they were working on the October issue of UPDATE Magazine. This is the first issue of the second year they have published the magazine, and the 5th total year for the magazine. When asked what they needed from their readers, Frank said," People need to renew their subscriptions, as all those who have not done so at this time are expired, and we also need more Z88 writers and hardware oriented articles." So folks, have you sent in your renewal...the first issue of the new subscription year is now in your hands. The Davis family has made a commitment to you, so make yours to them, by subscribing, getting friends to subscribe and by providing material to help your fellow computer user to get more out of his or her investment. We have had some fine writers, such as Bob Hartung, Peter Hale, Bill Cable, David Solly, Bob Mitchell, Al Feng, Paul Holmgren, Bill Woodward, Mike Felerski, Mike Fink, Dave Bennett, former Editor Bill Jones, Mort Binstock...and I just know I have left out a few! Add your name to this list. Larry Crawford, Bill Ferrebee have some material promised for us for the next issue, and we may get a chance to hear back from Larry Kenny and Tim Stoddard (I have learned a lot from these two in the past).

Will there be another Sinclair sub-show in Dayton next year? Well I have looked at the various newsletters our user group gets and seen other write ups on the show. Some gave a very negative report, full of inaccurate information. One would have to wonder if they were there at all, except that I saw them. The way various people perceive the same event has always stumped the philosophers of all ages. There was no way to accurately tell how many of the people at the show were there who were Sinclair users, but I saw more than some newsletters reported, and these were people I knew by name! If it seems I am taking some people to task, allow me to assure you this is my last word on the subject. It just seems to me that when I hear of various user groups bickering over who has the best newsletter, or the content of another groups newsletter, or getting offended for being called a user group rather than a Club, or personal verbal (or written) attacks from one programmer to another....well. Let us all resolve to eliminate this pettiness from our lives, otherwise we stand to look as ridiculous as Senate hearing into Ethics. We have many more years of use of our computers, new programs, new hardware. The only way to kill this off, is by BEING OUR OWN WORST ENEMY.

Forgive me for preaching. Write to me or to the Davis family if you have any suggestions on how to improve the magazine, or you have articles to submit,or if you are in need of technical assistance.

The Z88 and Telecommunications

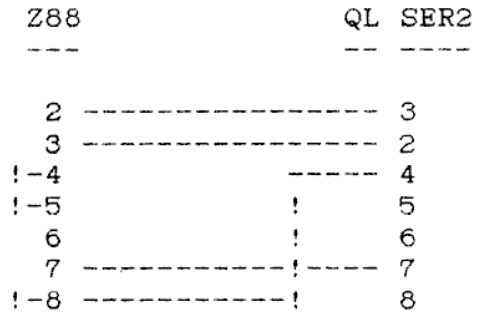
by Dave Bennett

The Z88 is particularly well suited for communicating to modems and other computers. A serial port which communicates up to 38,400 baud, a VT52 terminal program and a dedicated file transfer utility are included with the stock Z88. The Z88 also weighs only 2 pounds and is easily transported right next to the device you want to communicate with.

My Z88 is mainly used to talk to a pocket modem and a QL. Z88 files are archived on a QL disk. I also occasionally communicate with PCs at work and other Z88s.

I have designed and built cables to communicate with the QL, PCs and other Z88s. I built the modem cable from recommended pinouts by Cambridge.

The QL cable is as follows:



I have tried several other designs for a Z88 - QL cable but have not found a cable that works as well for transfering files.

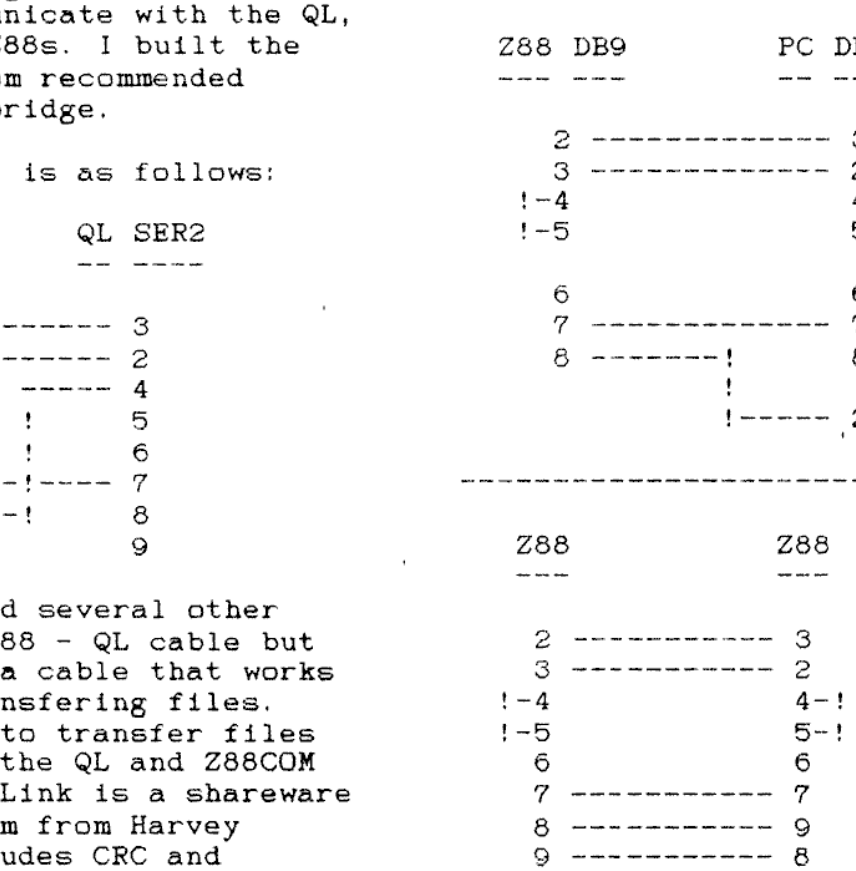
What I use to transfer files are Q_Link for the QL and Z88COM for the Z88. Q_Link is a shareware terminal program from Harvey Taylor. It includes CRC and Checksum xmodem as well as many other features. Z88COM is a publicly available terminal program from Phil Wheeler. It extends the built-in VT52 with checksum xmodem and some other features. Phil also operates the Z88 BBS in Los Angeles.

I basically connect the computers with the cable and run terminal programs which utilize xmodem on each machine. You set up one machine to send and one to receive. Then you start the transfer on both machines at the same time.

You can transfer ascii files without xmodem by various means but I prefer to use xmodem. It provides error checking in the transfer so you know the files are transfered OK. You can also transfer any type of file even machine language.

Z88 to PC and Z88 to Z88 transfers work similarly. On the PC I prefer to use PROCOMM. It is a powerful program and extremely easy to use. I would like to see it made available for the QL. For Z88 to Z88 transfers I am using Z88COM on both machines.

The Z88 - PC and Z88 - Z88 cables are as follows:



There also is a variation on Z88COM called Link by Dave Armstrong which turns the Z88 into a mini BBS. There are no message facilities but you can transfer files. All typing is done at a remote computer. The Z88 just sits there. It is similar to PROCOMMs Host Mode. It works well connected to a computer in the same room. Modem facilities were removed from

this variation but you can connect to the modem and then switch to Link by hand. With this program you can transfer files with someone across town at a prearranged time. You could even transfer QL and 2068 files.

There also is another program available for the Z88 called ZFU by Richard Haw. This is a utility which takes many files and archives them into one large file. In the process it compresses the files so the resulting large file is much smaller. You can archive all the files in all the ram devices of the Z88 into one file and just backup that one file to your QL or whatever.

The Z88 also works nicely with any Hayes compatible modem. Here are the official modem pinouts from Cambridge:

Z88		Modem
2	----------	2
3	----------	3
7	----------	7
5	----------	20
8	----------	20
9	----------	20

The Z88 includes a built-in VT52 terminal emulator. It works quite nicely although you have to dial manually with Hayes AT commands. It is also easy to send and receive ascii files with just the built-in software. The built-in VT52 also connects quite nicely to a VAX mini computer once you tell the VAX you have a VT52 with 8 lines.

But I like Xmodem. A terminal program was developed in England which provides xmodem. The disadvantages of this program are its high cost and it also adds its own protocol in place of the VT52. The built-in VT52 works much better.

Fortunately Z88COM came out which provides xmodem but works in concert with the built-in VT52. Z88COM is also much cheaper. In most cases it is available for the cost of a download. Z88COM can also autodial and autologon to five systems. It has a message upload feature for sending text files. All in all it is a great program.

The latest I heard was that Cambridge just came out with a VT100 terminal program. I have not heard too much about this. The VT100 can display graphics from a remote IBM or VAX. It moves the cursor around your screen on command from the remote system. I am not too sure how well this will work on the Z88 with its 8 line screen but it sounds interesting.

The Z88s portability and sheer connectivity to anything speaking RS232 make it a great little computer for telecommunications.

Z88 PIPEDREAM TIP

I have found that the <> R command in Pipedream is very powerful. Do some partial editing of a paragraph. Now move your cursor to the top of the paragraph. Type <> R and the paragraph will appear the way you want it to. This was taken from the 'HACKER', the official newsletter of the Timex-Sinclair User Group of Las Vegas.

Z88 USER FINDS POWER SUPPLY

This tip comes from the above newsletter also, and is from one of their members by the name of Chris Fenn. He has come up with an alternative to the costly little AA batteries that seem to run down so fast and then have to be discarded. Radio Shack has come up with a heavy duty and rechargeable 6 Volt battery pack. It has 5 AMP hours. If this is what you need then check it out. The part # is 23-185. The normal cost is $14.95, but has been found on sale at $9.88. This may be the answer to when you are on the go.

TECH TALK

Making A Wafadrive Parallel Printer Cable

By Michael J. Felerski

If you where one of the lucky people who purchased a Rotronics Wafadrive but was unable to obtain the parallel printer cable or your cable has been damaged, here is a way you can make your own cable.

Three parts are needed:

A 36-Position Flat Cable Connector (Centronics Type) Radio Shack #276-1533

A 26-Contact Card Edge Connector (IDC Style) 3M #925130-26-R

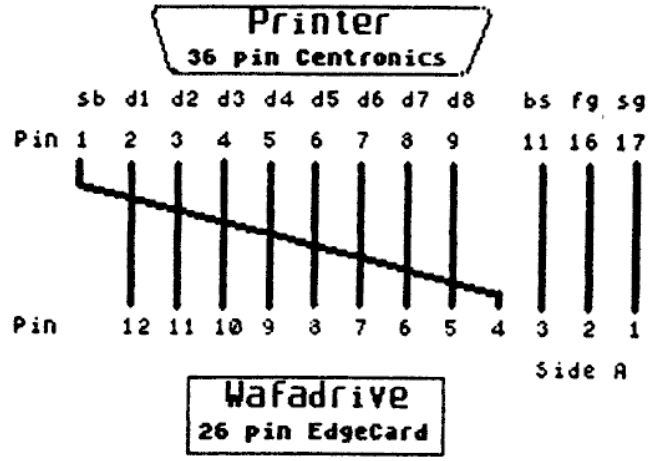
OR

A 34-Contact Card Edge Connector (IDC Style) Radio Shack #276-1564

3 to 5 foot of flat (ribbon) cable. 25 or 36 conductor. Radio Shack #278-772 #278-774

I recommend the 3M connector which is used to connect to the back of the Wafadrive because it is the exact size needed. But, since this may be a difficult part to obtain, you may also use the Radio Shack 34 contact connector, but you will have to use a hacksaw to trim off one side in order for it to fit on the edge card of the Wafadrive.

The wiring diagram for the two connectors is below. Since this is a centronics interface at the printer's end, the cabling should be the same for any printer, but check your printer manual first. This cable uses all of the Wafadrive's parallel lines but does not us all of the printer's parallel lines.


Printer
36 pin Centronics
sb d1 d2 d3 d4 d5 d6 d7 d8 bs fg sg
Pin 1 2 3 4 5 6 7 8 9 11 16 17
Pin 12 11 10 9 8 7 6 5 4 3 2 1
Side A
Wafadrive
26 pin EdgeCard

(NOTICE: ISTUG and/or the author is not responsible for any damages to equipment resulting from information contained in this article.)

The lines are defined as follows:

Printer Pin	Line name	Wafadrive pin
1	Strobe	4
2	Data Bit 1	5
3	Data Bit 2	6
4	Data Bit 3	7
5	Data Bit 4	8
6	Data Bit 5	9
7	Data Bit 6	10
8	Data Bit 7	11
9	Data Bit 8	12
11	Busy	3
16	Frame Gnd	2
17	Signal Gnd	1

Start by attaching the 26 (34) contact card edge connector to the ribbon cable (Remember to remove any extra/unused wires from the ribbon cable first so that only 26 or 24 are used.)

Crimp the connector so that the small metal V's line up one per conductor. These V's are used to break the casing and make contact with the bare wire. Crimping tools are recommended, but I find that a small shop vice works extreamly well.

Now take the other end of the ribbon cable, and using a sharp hobby knife, carefully remove/cut away the Eighth line from the left side of the cable (see Hint below) so it is no longer attached to the conductor to the right or left of it. Make sure not to cut through the insulation such that the copper wire is exposed. Pull back and remove this line for about an inch and a half. Do the same to line one, except cut this line off after it is pulled back (it is not used.)

HINT

To find the eighth line, hold the edge card connector with slot facing you, and count along the ribbon cable from right to left. NOTE: If you are using a 24 conductor ribbon cable, you need to find the sixth line to cut away and pull back. This line is the STROBE line and must connect to Pin 1 of the Centronics connector.

The next part requires you to take the Centronics connector and position it on the ribbon cable so that the wide end is toward the edge card connector.

Position the eighth line in the V of the Centronics pin 1. Now place the remainder of the ribbon cable on the V's (pins 2 through 9, and 11) remember that pin 10 is left unused. It is also important to note that most printers will not use pins 16 and 17 so I recommend that they are not crimped/used.

Very carefully, crimp the Centronics connector keeping the eighth (sixth) line in pin 1. Lastly, use a continuity tester to check all connections so that they match the schematic on the left before attaching and using it on the Wafadrive and printer.

"XREF"--A Review by Charles Dittell

A fascinating and useful program, this XREF, from PDQL--written by Chas. Dillon, author of "Notes on Psion's QL Archive" (available through the Quanta QL users' group), and a creative contributor of many QL software programs. The purpose of XREF is to enable Basic programmers to swiftly analyze, debug and improve their Basic programs. I received my program by mail (from Sharpe's, Inc.); one microdrive cartridge wrapped in foil, with no accompanying manual or information whatsoever! I inserted the cartridge in slot one, did a directory listing, and came up with an "xref_doc" file, which I loaded into Quill and printed: lo!--the instructions!

Using XREF is quite simple: load (but don't run) your Basic program, then type "exec mdv1_xref_bin" (or if you ordered the floppy disc version, substitute "flp" for "mdv"); a series of questions appear, asking your program name, output of information to screen or printer (printer is suggested), location of program (mdv or flp), and full report or "exceptions" (more on this later). After answering all questions, XREF examines your program line by line, and finally, sorts all variables and begins its printout.

The information you receive is 1) general statistics (total number of variable names, buffer size, and related information), 2) user defined variables (their name and line numbers where they appear, as well as codes for which line numbers on which they are dimensioned, assigned, etc., 3) number of times system commands were used, and (I believe) most importantly, 4) the "exceptions" report: a listing of variables (and associated information, including line numbers) where problems may exist. It is this last area where you might find variables defined but not used, or used but (apparently) not defined.

XREF is especially useful for Basic programs of more than a hundred lines or so; I used it with an 1100-line inventory program, and got a 7-page printout, which included 3 variables I had assigned but never used--it was a snap to find the variables and delete them. It also pointed out that I had set the "mode" variable more often than necessary, and I had mis-used the "con" (console) variable!

Problems? Just a couple of insignificant ones--all references within Basic programs to "MDV1_", "MDV2_", "FLP (1_ or 2_)", "SCR", "con", or "ram" are automatically considered possible problems. A conventionally printed manual would have been nice, too.

The usefulness of XREF to beginning or advanced Basic programmers is without question. Hours of debugging time can be saved, and "tighter", more effective programs can be produced. At $24.95 (from Sharpe's), XREF is an incredible bargain.

QL UPDATE ISSUE DISKS

These disks contain at least one major piece of software written specifically for disk drive and are guaranteed to be worth the money. The rest of the disks are filled with various utility programs taken from the issues of UPDATE and a few surprises thrown in. Half of the money goes to the author and is meant to encourage new programming for the QL that makes use of the disk drive systems, and microdrives on both the expanded and unexpanded QL. Where possible we will give a version for each of these configurations. Some of the programs take advantage of TK2 by Tony Tebby. All are 20.00, except QLuster, which is $15.00; includes P & H, add $1.00 CAN.Available as 3 1/2 or 5 1/4 disks. Add $5.00 for mailing to other countries. We accept personal checks, company checks, money orders as well as International Postal Money Orders, but no charge cards. If ordering on MDV, then please include one that is already formatted, so we will know it will run on your QL. Due to the expense of MDVs this is necessary. If two MDVs are required we will state so in the ad.

1) HARTUNG UTILITY ISSUE DISK- Several excellent programs such as stand alone data base, Address, and QSO files. All are in Superbasic. Lots of hints and tricks for programmers. Requires some knowledge of Superbasic or a yen to learn. Recently updated by Bob Hartung. Address file can be used as inventory program. It can print out labels. Both screen or paper printouts can be by Alpha sort, or be by last name.

2) CABLE ARCHIVE ISSUE DISK- Contains six Archive programs along with Doc files to get you going on making use of the Archive programming language. Also has Tasket, plus Doc file, to give you multi-tasking on your QL (much cheaper than QRAM or Taskmaster). Included is Arithmetic, a Superbasic program for math, along with math drills. This is for both the advanced and beginner user and greatly extends the use of Archive. To order on microdrive send two formatted microdrives, too much for one!

3) QLUSTER ISSUE DISK by Al Feng- Ql utilities to unclutter your disks and microdrives. COPY, DELETE, FORMAT, PRINT, VIEW, plus extended use of some Tool Kit 2 commands. TK2 is required. These are TURBO compiled for speed. Multitasks and uses minimal key presses. Includes Fast-Disk and Vegemat2, a super clone making program. Also Snap Shot-a directory column or condensed printout program.

4) DOS EMULATOR COMPANION ISSUE DISK by Al Feng- Just released in Oct. issue. Makes better use of Solution, PC Conqueror, DisCover, XOVER, QLuster and scr_codes. If you are going to use the emulators, then check this out, you won't regret this buy.

5) QLuMSi DOS by Al Feng- a MSDOS simulator and front end program for the QL, also includes other programs by AL Feng for file management and cloning of programs. A Great Learning Tool

UPDATE COMPUTER SYSTEMS invites you to submit software programs that may become Issue Disks. Please submit program on disk, with documentation and article to accompany the program. We are here to get North American software available and known. We solicit programs, tips, reviews and utilities for future issues.

TS2068 UPDATE ISSUE DISKS

These disks contain at least one major piece of software written specifically for disk drive and are guaranteed to be worth the money. The rest of the disks are filled with various utility programs taken from the issues of UPDATE and a few surprises thrown in. Half of the money goes to the author and is meant to encourage new programming for the TS2068 that makes use of the various disk drive systems. Presently we are offering disks for the Larken and Oliger Interfaces, but have programs available for the Aerco (just as soon as I hear that there is a demand to have available). All are $20.00 per disk (add $1.00 Canada) and include postage and handling. The programs have been Temporarily lowered in price to make them more widespread among the TS2068 Users! Both 3 1/2 and 5 1/4, 40 and 80 track available. Please add $5.00 for mailing to other countries. We accept personal checks, company checks, money orders as well as International Postal Money Orders. We do not have facilities for charge cards.

1) MITCHELL BUDGET DISK, with wide spreadsheet printer driver, MS-TAS and various other utilities. Available as either Larken or as Oliger format.

2) Bob Hartung DOSDEX UTILITY ISSUE DISK, a complete disk management group of programs for the Oliger Interface only. This includes Multi-Manager for file handling. This collection has recently been updated.

3) MAIL MERGE ISSUE DISK, Oct 87 and Jan 88 issues of UPDATE utilities added to fill out this disk. Includes a tutor program for the Mail Merge program, List Looker, Purity, J-Utilities and Extra Memory Utilities.

4) MITCHELL VIEW CALC ISSUE DISK, forget the old slow VC for tape! The rest of the disk is filled with other utilities plus some Public Domain for fillers. At this time for Larken format only.

5) OLIGER DISK DRIVE BBS PROGRAM, this allows users of the Oliger interface to be able to operate a disk based bulletin board from the TS2068. The disk is also filled with many other Oliger disk routines and tips on using the Oliger System. New by Paul Holmgren. Can use upto four DSQD disk drives.

6)The HYBISCUS ENSEMBLE, consisting of two separate, but complimentary sets of programs. A) Daisy.B6 Ensemble, and B) Udbm.B6 Ensemble. LKDOS only, $22 each or $36 for both. The best file and database available for Larken, by Bill Jones. The price remains the same on this one, no change. Wordprocessor included.

7) TS2068 Super Calc by Bill Jones. New this issue. Oliger, $15.

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